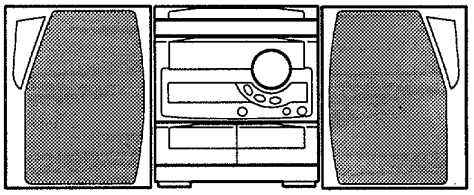
aiwa

aiwa SERVICE

NSX-K340

SERVICE MANUAL



COMPACT DISC STEREO
CASSETTE RECEIVER

- BASIC TAPE MECHANISM : 6ZM-3 PR1NM, YPR1N
- BASIC CD MECHANISM : 4ZG-1 VSGDNM, VSGD
- TYPE: HR, HC, HE

SYSTEM	CD-CASSEIVER	SPEAKER	REMOTE CONTROLLER
NSX-K340	CX-NK340	SX-NS22	RC–7

- If requiring information about the CD mechanism, see service manual of 4ZG-1. (S/M Code No. 09-977-206-10T)

S/M Code No. 09–97A–227–3FE

SPECIFICATIONS

<FM Tuner section>

Tuning range	87.5 MHz to 108 MHz
Usable sensitivity (IHF)	13.2 dBf
Antenna terminals	75 ohms (unbalanced)

<MW Tuner section>

Tuning range	531 kHz to 1602 kHz (9 kHz step) 530 kHz to 1710 kHz (10 kHz step)
Usable sensitivity	350 μV/m
Antenna	Loop antenna

<SW Tuner section>

Tuning range	5.900 MHz ~ 17.900 MHz
Antenna	Wire antenna

<Amplifier section>

Power output	Rated: 32 W + 32 W (6 ohms, T.H.D 1 %, 1 kHz) Reference: 40 W + 40 W (6 ohms, T.H.D 10 %, 1 kHz)
Total harmonic distortion	0.2 % (20 W, 1 kHz, 6 ohms, DIN AUDIO)
Inputs	VIDEO/AUX: 400 mV MIC: 1.0 mV (10 kohms)
Outputs	CD DIGITAL OUT (OPTICAL) VIDEO OUT: 1.0 Vp-p (75 ohms) SPEAKERS: accept speakers of 6 ohms or more PHONES (stereo jack) : accepts headphones of 32 ohms or more

<Cassette deck section>

Track format	4 tracks, 2 channels stereo
Frequency response	50 Hz –10000 Hz
Recording system	AC bias
Heads	Deck 1 : Playback head x1 Deck 2 : Recording/playback head x1, erase head x 1

<Compact disc player section>

Laser	Semiconductor laser (λ =780 nm)
D-A converter	1 bit dual
Signal-to-noise ratio	85 dB (1 kHz, 0 dB)
Harmonic distortion	0.05 % (1 kHz, 0 dB)
Wow and flutter	Unmeasurable
Video signal	NTSC/PAL color format (selectable)
Video data	MPEG 1
Audio data	MPEG 1, LAYER 2

<Speaker system SX-NS22>

Cabinet type	2 way, bass reflex (magnetic shielded type)
Speakers	Woofer : 120 mm cone type Tweeter : 10 mm ceramic type
Impedance	6 ohms
Output sound pressure level	87 dB/W/m
Dimensions (W x H x D)	240 x 304 x 250 mm
Weight	2.7 kg

<General>

Power requirements	120 V/220 - 240 V AC,switchable 50/60 Hz
Power consumption	105 W
Dimensions of main unit (W x H x D)	260 x 308.3 x 350 mm
Weight of main unit	5.8 Kg

• Design and specifications are subject to change without notice.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!!
WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!
Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING!
Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

ATTENTION
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!
Usynlig laserstråling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

CLASS 1	LASER PRODUCT
KLASSE 1	LASER PRODUKT
LUOKAN 1	LASER LAITE
KLASS 1	LASER APPARAT

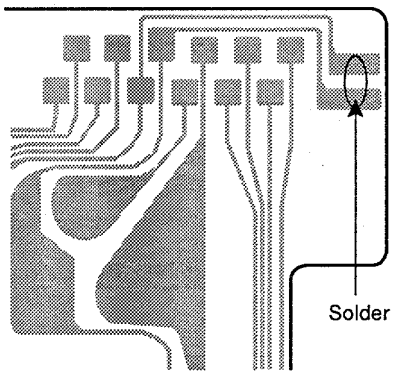
Precaution to replace Optical block

(KSS – 213B)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in figure right.

PICK-UP Assy P.C.B



ELECTRICAL MAIN PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-020-454-010		IC,DN6851
	86-NFZ-642-010		IC,NJM4558LD
	87-017-804-010		IC,BU4052BCP
	87-NF8-612-010		IC,M62420SPL
	87-NF8-618-010		IC,LC72131(L)
	87-NF8-617-010		IC,LA1836(L)
	87-NH8-602-010		C-IC,UPD78044HGF-260-3B9
	87-NF8-619-010		IC,SPS-442-1-A
	87-017-959-010		IC,M65843P
	87-027-938-010		IC,TC4053BP
	87-A20-796-010		IC,BU2090
TRANSISTOR			
	87-026-463-080		TR,2SA933SRS
	89-213-702-010		TR,2SB1370 (1.8W)
	89-333-317-080		TR,2SC3331 (0.5W)
	87-A30-083-080		TR,CSD1489B
	89-113-187-080		TR,2SA1318TU
	87-026-269-080		TR,DTA114ES
	87-A30-112-080		TR,C2N5551
	87-A30-109-010		TR,2SD 2495
	87-A30-108-010		TR,2SB1626
	87-A30-047-080		TR,CSD655E
	86-NFZ-647-080		TR,DTC144ESA
	86-NFZ-650-080		TR,DTA144WSA
	86-NFZ-649-080		TR,DTC143XSA
	86-NFZ-645-080		TR,DTA114YSA
	87-A30-092-080		FET,2SK439E/F
	89-305-352-380		TR,2SC535(B/C)
	86-NFZ-657-080		TR,2SC1923O
	87-026-462-080		TR,2SC1740 S(RS 0.3W)
	89-320-011-080		TR,2SC2001 (15W)
	87-A30-152-080		TR,2SC5395F
	87-026-245-080		TR,DTC114ES
	89-109-521-080		TR,2SA952 (0.6W)
	87-A30-084-080		TR,CSB1058B
	86-NFZ-648-080		TR,DTA143ESA
	87-A30-090-080		FET,2SK2541
DIODE			
	87-A40-393-090		DIODE,1N5402 GW(F20)
	87-070-274-080		DIODE,1N4003 SEM
	87-A40-236-080		ZENER,MTZJ24D
	87-A40-246-080		DIODE,IN4148 T-72
	87-017-933-080		ZENER,MTZJ10D
	87-A40-235-080		ZENER,MTZJ9.1C
	87-A40-234-080		ZENER,MTZJ5.6A
	87-A40-291-080		DIODE,1N4148M(CPT)
	87-017-932-080		ZENER,MTZJ6.2B
	87-070-136-080		ZENER,MTZJ5.1B
MAIN C.B			
C102	87-016-055-090		CAP,E 3300-42 HI-R
C103	87-A10-627-090		CAP,E 2200-50 M SMG
C105	87-018-127-080		CAP, CER 470P-50V
C106	87-010-408-080		CAP, ELECT 47-50V
C107	87-010-384-080		CAP, ELECT 100-25V
C108	87-010-386-080		CAP,E 330-25 SME
C109	87-010-383-080		CAP, ELECT 33-25V
C110	87-010-383-080		CAP, ELECT 33-25V
C111	87-010-247-080		CAP, ELECT 100-50V
C112	87-010-263-080		CAP, ELECT 100-10V
C113	87-010-403-080		CAP, ELECT 3.3-50V
C114	87-010-374-080		CAP, ELECT 47-10V
C118	87-018-134-080		CAPACITOR,TC-U 0.01-16
C201	87-010-401-080		CAP, ELECT 1-50V
C202	87-010-401-080		CAP, ELECT 1-50V
C203	87-018-202-080		CAP.CERAM.6800PF
C204	87-018-202-080		CAP.CERAM.6800PF
C207	87-010-260-080		CAP, ELECT 47-25V
C208	87-010-260-080		CAP, ELECT 47-25V
C211	87-010-374-080		CAP, ELECT 47-10V
C212	87-010-374-080		CAP, ELECT 47-10V
C213	87-010-260-080		CAP, ELECT 47-25V
C214	87-010-260-080		CAP, ELECT 47-25V
C219	87-010-544-080		CAP, ELECT 0.1-50V
C220	87-010-544-080		CAP, ELECT 0.1-50V
C227	87-010-260-080		CAP, ELECT 47-25V
C229	87-018-113-080		CAP, CER 33P-50V
C230	87-018-113-080		CAP, CER 33P-50V
C301	87-018-195-080		CAP, CER 1200P-16V
C302	87-018-195-080		CAP, CER 1200P-16V
C303	87-010-263-080		CAP, ELECT 100-10V
C304	87-010-263-080		CAP, ELECT 100-10V
C309	87-010-546-080		CAP, ELECT 0.33-50V
C310	87-010-546-080		CAP, ELECT 0.33-50V
C311	87-018-130-080		CAP,TC-U 820P-50 B
C312	87-018-130-080		CAP,TC-U 820P-50 B
C314	87-010-260-080		CAP, ELECT 47-25V
C351	87-018-131-080		CAP, CER 1000P-50V
C352	87-018-131-080		CAP, CER 1000P-50V
C353	87-010-263-080		CAP, ELECT 100-10V
C354	87-010-263-080		CAP, ELECT 100-10V
C360	87-010-370-080		CAP,E 330-6.3 SME
C401	87-010-401-080		CAP, ELECT 1-50V
C402	87-010-401-080		CAP, ELECT 1-50V
C403	87-018-118-080		CAP,TC-U 82P-50 B
C404	87-018-118-080		CAP,TC-U 82P-50 B
C452	87-010-385-080		CAP, ELECT 220-25V
C458	87-018-131-080		CAP, CER 1000P-50V
C459	87-018-128-080		CAP, CERA-SOL SS 560P
C461	87-018-126-080		CAP,TC-U 390P-50 B
C462	87-018-126-080		CAP,TC-U 390P-50 B
C471	87-010-400-080		CAP, ELECT 0.47-50V
C472	87-010-400-080		CAP, ELECT 0.47-50V
C505	87-010-545-080		CAP, ELECT 0.22-50V
C506	87-010-545-080		CAP, ELECT 0.22-50V
C510	87-010-405-080		CAP, ELECT 10-50V
C511	87-010-260-080		CAP, ELECT 47-25V
C512	87-010-260-080		CAP, ELECT 47-25V
C513	87-010-221-080		CAP, ELECT 470-10V
C515	87-010-401-080		CAP, ELECT 1-50V
C516	87-010-401-080		CAP, ELECT 1-50V
C517	87-018-134-080		CAPACITOR,TC-U 0.01-16
C518	87-018-134-080		CAPACITOR,TC-U 0.01-16
C701	87-010-404-080		CAP, ELECT 4.7-50V
C711	87-010-402-080		CAP, ELECT 2.2-50V
C712	87-010-112-080		CAP, ELECT 100-16V
C722	87-018-149-080		CAP,TC-U 15P-50 CH
C728	87-010-248-080		CAP, ELECT 220-10V
C733	87-018-148-080		CAP,TC-U 12P-50 CH
C741	87-010-546-080		CAP, ELECT 0.33-50V
C742	87-010-546-080		CAP, ELECT 0.33-50V
C771	87-010-405-080		CAP, ELECT 10-50V
C773	87-018-208-080		CAP 0.047-50F
C774	87-010-263-080		CAP, ELECT 100-10V
C775	87-010-405-080		CAP, ELECT 10-50V
C777	87-010-400-080		CAP, ELECT 0.47-50V
C778	87-010-401-080		CAP, ELECT 1-50V
C779	87-010-401-080		CAP, ELECT 1-50V
C791	87-010-401-080		CAP, ELECT 1-50V
C792	87-018-196-080		CAP, CER 1500P-16V
C794	87-010-260-080		CAP, ELECT 47-25V
C796	87-010-403-080		CAP, ELECT 3.3-50V

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C799	87-010-405-080		CAP, ELECT 10-50V
C801	87-018-102-080		CAP,TC-U 6.8P-50 SL
C806	87-018-101-080		CAP,TC-U 5.6P-50 SL
C807	87-018-102-080		CAP,TC-U 6.8P-50 SL
C808	87-018-098-080		CAP,TC-U 3.3P-50 SL
C809	87-018-119-080		CAP, CER 100P-50V
C811	87-018-107-080		CAP,TC-U 18P-50 SL
C815	87-018-134-080		CAPACITOR,TC-U 0.01-16
C821	87-018-148-080		CAP,TC-U 12P-50 CH
C822	87-018-111-080		CAP, CERA-SOL SS 27P
C823	87-018-111-080		CAP, CERA-SOL SS 27P
C824	87-018-109-080		CAP, CER 22P-50V
C903	87-010-401-080		CAP, ELECT 1-50V
C941	87-018-107-080		CAP,TC-U 18P-50 SL
C943	87-018-134-080		CAPACITOR,TC-U 0.01-16
C944	87-014-051-080		CAPACITOR (PP), 560P
C945	87-018-134-080		CAPACITOR,TC-U 0.01-16
C950	87-014-073-080		CAP,PP 4700P-100 J
C952	87-018-134-080		CAPACITOR,TC-U 0.01-16
C953	87-018-134-080		CAPACITOR,TC-U 0.01-16
C954	87-010-400-080		CAP, ELECT 0.47-50V
C955	87-018-134-080		CAPACITOR,TC-U 0.01-16
C956	87-010-263-080		CAP, ELECT 100-10V
C999	87-018-209-080		CAP, CER 0.1-50V
CF801	87-008-261-010		FILTER, SFE10.7MA5-A
D801	87-A40-226-080		VARI-CAP,SVC251SPA
D802	87-A40-226-080		VARI-CAP,SVC251SPA
J201	87-A60-024-010		JACK 6.3BLK W/S WKM
J202	87-A60-238-010		TERMINAL,SP 4P (MSC)
J203	87-A60-354-010		JACK,PIN 2P MSP -242V-05
J801	87-A60-202-010		TERMINAL,ANT 4P MSP-154V-02
L451	86-NFZ-696-010		COIL,OSC 85KHZ BIAS
L741	87-A50-015-010		COIL,FM DET(TOK)
L742	87-A90-052-010		FLTR,CFMT-450A(TOK)
L750	87-005-165-080		COIL 1UH (H,E)
L801	87-A50-110-010		COIL,FM BPF EX
L802	87-006-244-010		COIL,RF FM 3-1/2T,L4
L803	87-006-246-010		COIL,RF FM 3-1/2T,L
L804	86-NFZ-694-080		COIL,2.2UH K CECS
L805	87-A50-111-110		COIL,FM OSC EX
L806	86-ZA1-604-110		IFT,FM IFT 7-6.2
L807	86-NFZ-694-080		COIL,2.2UH K CECS
L901	86-NF4-666-010		AM PACK 3(TOK)
L941	87-A50-022-010		COIL,ANT SW(COI)
L942	87-A50-021-010		COIL,OSC SW(COI)
L943	87-005-372-080		COIL S 1MHM
L944	87-003-131-080		COIL, 10MH
⚠ PR202	87-026-681-080		PROTECTOR,5A 60V 491
⚠ PR401	87-A90-246-080		PROTECTOR,0.25A 60 4
R223	87-A00-258-080		RES,M/F 0.22-1W J
R224	87-A00-258-080		RES,M/F 0.22-1W J
SFR451	87-A90-432-080		SFR,30K H NVZ6TLTA<HC,HR>
SFR451	87-024-435-080		SFR,33K RH063EC<HE>
SFR452	87-A90-432-080		SFR,30K H NVZ6TLTA<HC,HR>
SFR452	87-024-435-080		SFR,33K RH063EC<HE>
SFR722	87-A90-500-080		SFR,10K H NVZ6TLTA
TC941	87-011-220-080		TRIMMER CAP 20P VTC
TC942	87-011-221-080		CAP, TRIMMER 30P
W101	83-NE2-618-110		F-CABEL,5P-2.5
W102	88-906-531-110		FF-CABLE,6P 1.25
X703	87-A70-044-010		VIB, CER CMU2-456A15
X721	86-NFZ-651-010		VIB,XTAL 4.500MHZ CSA-309

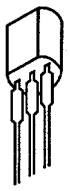
FRONT C.B

C101	87-018-205-080		CAP, CERA-SOL 0.022
C203	87-010-405-040		CAP,E 10-50
C204	87-A10-586-040		CAP,E 47-35 7L SR
C205	87-018-208-080		CAP 0.047-50F
C206	87-018-205-080		CAP, CERA-SOL 0.022
C207	87-010-544-040		CAP,E 0.1-50 SME
C208	87-010-263-040		CAP,E 100-10
C209	87-018-205-080		CAP, CERA-SOL 0.022
C210	87-018-208-080		CAP 0.047-50F
C211	87-A10-189-040		CAP,E 220-10
C212	87-018-208-080		CAP 0.047-50F
C213	87-010-494-040		CAP,E 1-50 GAS
C215	87-018-149-080		CAP,TC-U 15P-50 CH
C216	87-018-115-080		CAP, CER 47P-50V
C217	87-018-113-080		CAP, CER 33P-50V
C218	87-018-205-080		CAP, CERA-SOL 0.022
C220	87-018-127-080		CAP, CER 470P-50V
C221	87-018-205-080		CAP, CERA-SOL 0.022
C225	87-018-205-080		CAP, CERA-SOL 0.022
C226	87-018-134-080		CAPACITOR,TC-U 0.01-16
C301	87-010-421-040		CAP,E 4.7-50 5L
C302	87-010-404-040		CAP,E 4.7-50 SME
C304	87-010-421-040		CAP,E 4.7-50 5L
C305	87-010-404-040		CAP,E 4.7-50 SME
C402	87-010-545-040		CAP,E 0.22-50 SME
C403	87-018-118-080		CAP,TC-U 82P-50 B
C404	87-010-544-040		CAP,E 0.1-50 SME
C406	87-018-130-080		CAP,TC-U 820P-50 B
C407	87-010-406-040		CAP,E 22-50 SME
C408	87-010-405-040		CAP,E 10-50
C409	87-010-248-040		CAP,E 220-10 SME
C410	87-010-405-040		CAP,E 10-50
C411	87-018-209-080		CAP, CER 0.1-50V
C412	87-010-401-040		CAP,E 1-50 SME
C501	87-010-263-040		CAP,E 100-10
C502	87-018-134-080		CAPACITOR,TC-U 0.01-16
C503	87-018-127-080		CAP, CER 470P-50V
C504	87-018-127-080		CAP, CER 470P-50V
C505	87-010-374-040		CAP,E 47-10
C511	87-010-260-040		CAP,E 47-25 SME
C512	87-010-544-040		CAP,E 0.1-50 SME
C514	87-010-544-040		CAP,E 0.1-50 SME
C516	87-010-401-040		CAP,E 1-50 SME
FL301	82-NF7-631-010		FL 7BT-185GK
J401	87-A60-284-010		JACK,3.5MO (MSC)
L501	87-005-456-080		COIL,1000UHFLR50,K
S301	87-A90-095-080		SW,TACT EVQ11G04M
S302	87-A90-095-080		SW,TACT EVQ11G04M
S303	87-A90-095-080		SW,TACT EVQ11G04M
S304	87-A90-095-080		SW,TACT EVQ11G04M
S305	87-A90-095-080		SW,TACT EVQ11G04M
S306	87-A90-095-080		SW,TACT EVQ11G04M
S307	87-A90-095-080		SW,TACT EVQ11G04M
S308	87-A90-095-080		SW,TACT EVQ11G04M
S309	87-A90-095-080		SW,TACT EVQ11G04M
S310	87-A90-095-080		SW,TACT EVQ11G04M
S311	87-A90-095-080		SW,TACT EVQ11G04M
S312	87-A90-095-080		SW,TACT EVQ11G04M
S313	87-A90-095-080		SW,TACT EVQ11G04M
S314	87-A90-095-080		SW,TACT EVQ11G04M
S315	87-A90-095-080		SW,TACT EVQ11G04M
S316	87-A90-095-080		SW,TACT EVQ11G04M
S317	87-A90-095-080		SW,TACT EVQ11G04M
S318	87-A90-095-080		SW,TACT EVQ11G04M
S319	87-A90-095-080		SW,TACT EVQ11G04M
S320	87-A90-095-080		SW,TACT EVQ11G04M
S321	87-A90-095-080		SW,TACT EVQ11G04M
S323	87-A90-095-080		SW,TACT EVQ11G04M
S324	87-A90-095-080		SW,TACT EVQ11G04M
SW201	87-NF8-616-010		SW,RTRY REB161(W/O NUT)
VR401	87-NB7-602-010		VR,RTRY 10KAX1 1 V
VR501	83-NM1-627-010		VR,10KB RK11K1130
W103	88-913-121-110		FF-CABLE,13P 1.25
W104	88-911-091-110		FF-CABLE,11P 1.25
X201	87-A70-075-080		VIB,CER 4.19MHZ CRHF

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
AC2 C.B			
AC1 C.B			
⚠ FC1	87-A90-505-080		FUSE CLAMP,TP00351-51
⚠ FC2	87-A90-505-080		FUSE CLAMP,TP00351-51
⚠ F101	87-035-366-010		FUSE, 2.5A 250V
⚠ PT101	87-NH8-606-010		PT,7NH-8H
⚠ SW101	87-A90-234-010		SW,SL 1-2-2 SW2201
⚠ T1	87-A60-317-010		TERMINAL, 1P MSC
⚠ T2	87-A60-317-010		TERMINAL, 1P MSC
SUB C.B			
C601	87-010-403-080		CAP, ELECT 3.3-50V
C602	87-010-403-080		CAP, ELECT 3.3-50V
C603	87-010-403-080		CAP, ELECT 3.3-50V
C604	87-010-403-080		CAP, ELECT 3.3-50V
C605	87-010-263-080		CAP, ELECT 100-10V
C606	87-010-405-080		CAP, ELECT 10-50V
C607	87-010-401-080		CAP, ELECT 1-50V
W601	88-906-371-110		FF-CABLE,6P 1.25
W604	88-913-061-110		FF-CABLE,13P 1.25

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
DECK C.B			
CON105	87-099-753-019		CONN,11P H 9604
CON301	86-ZM3-604-019		CON ASSY,3P-PB
CON351	86-ZM3-605-019		CON ASSY,8P-RPB
SFR1	87-024-581-089		SFR,3.3K DIA 6H
SOL1	82-ZM1-618-010		SOL ASSY, 27
SOL2	82-ZM1-618-010		SOL ASSY, 27
SW1	87-A90-248-010		SW, MICRO ESE11SH2CXQ
SW2	87-A90-248-010		SW, MICRO ESE11SH2CXQ
SW3	87-A90-248-010		SW, MICRO ESE11SH2CXQ
SW4	87-A90-248-010		SW, MICRO ESE11SH2CXQ
SW5	87-A90-248-010		SW, MICRO ESE11SH2CXQ
W1	82-ZM3-601-019		RBN-CORD,4P-75

TRANSISTOR ILLUSTRATION



E C B

2SC535
2SC19230

E C B

CSD655E
CSD1489B
CSB1058B
2SA952
C2N5551
2SC2001

G S D

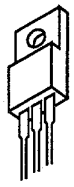
2SK439

E C B

2SA933S DTC144ESA
2SC1740 DTA114YSA
DTC114ES DTC143XSA
DTA143ESA DTA114ES
DTA144WSA

B C E

2SB1370



B C E

2SB1626
2SD2495

E C B

2SC3331
2SA1318

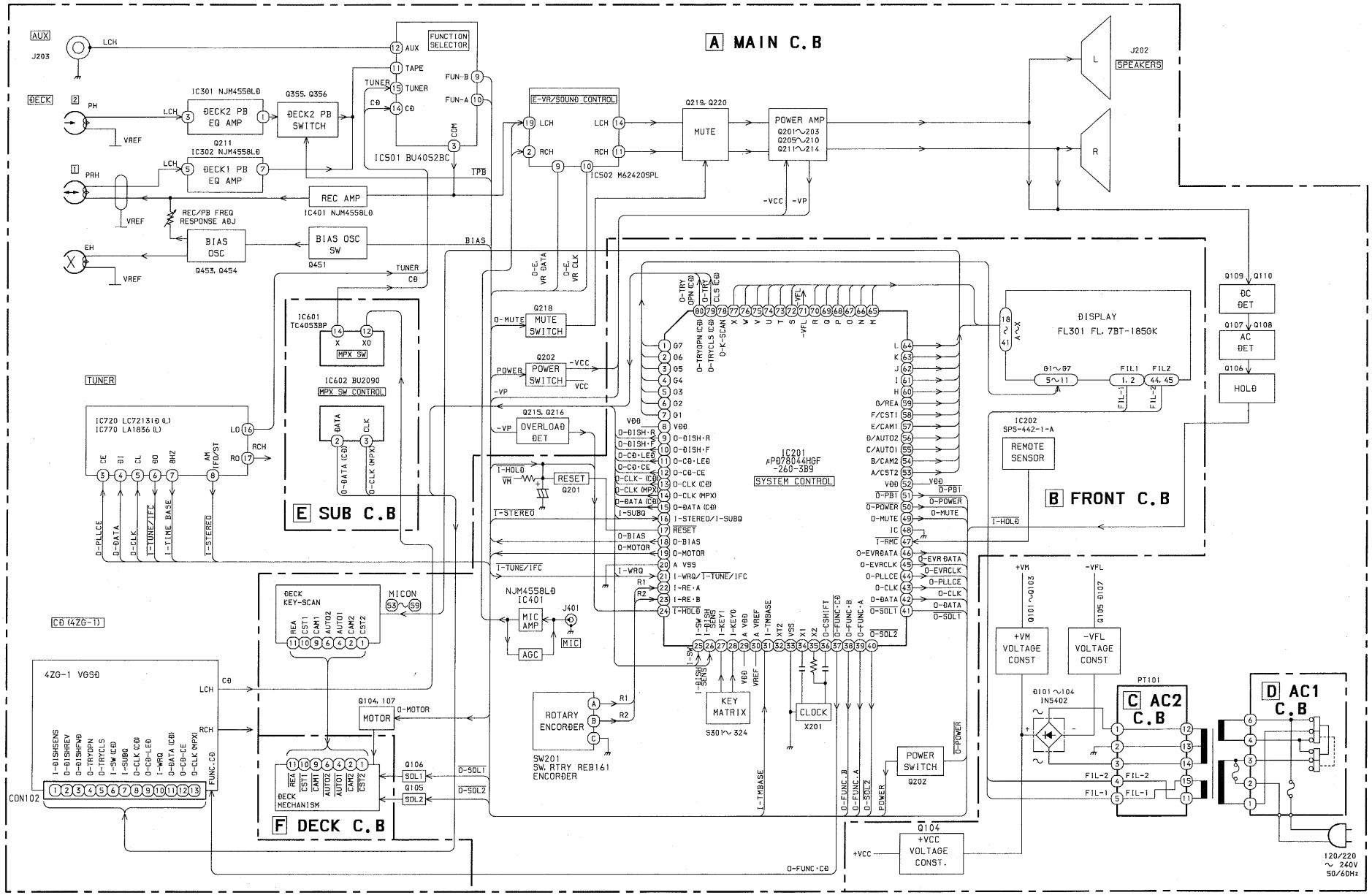
S D G

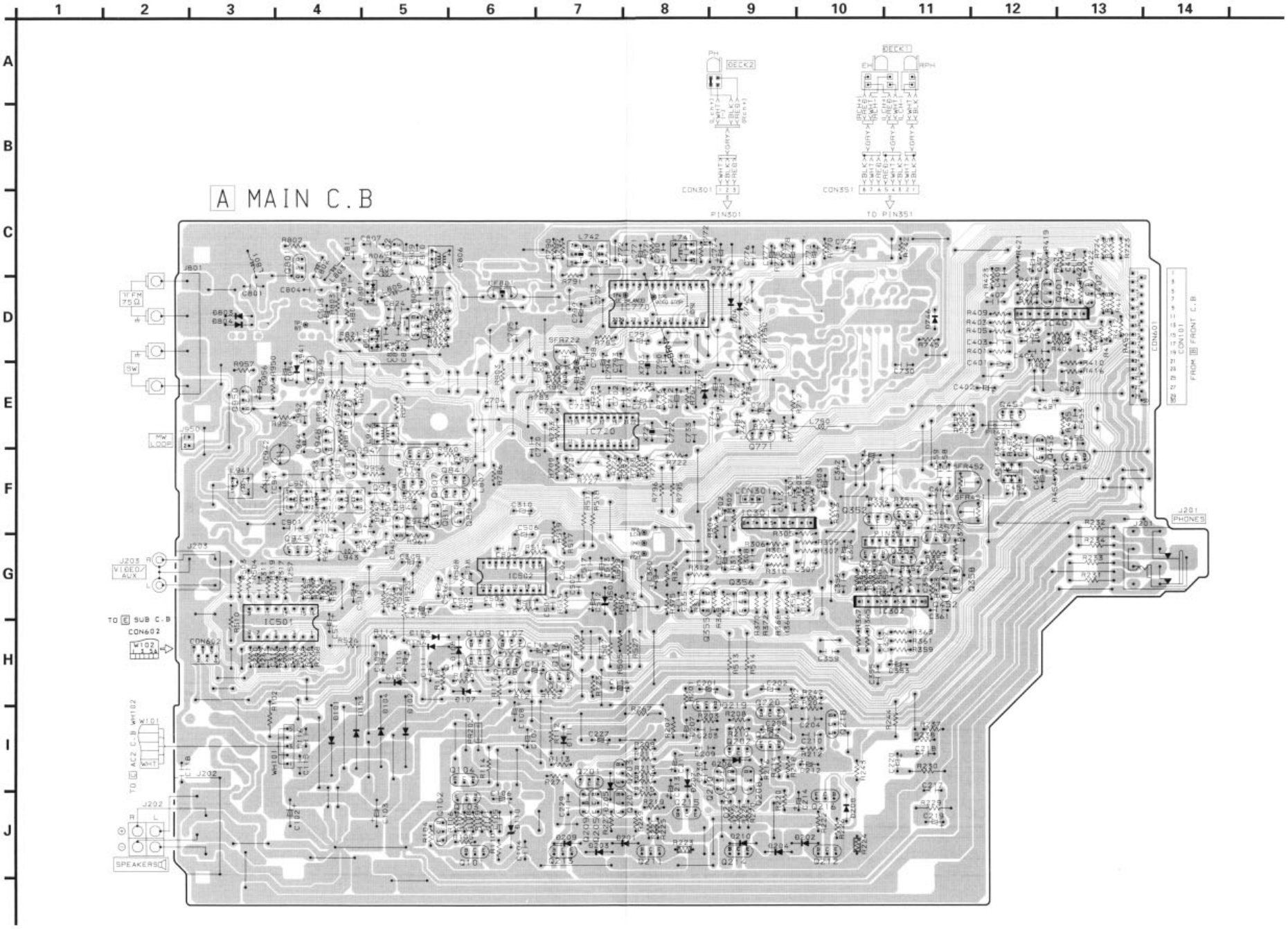
2SK2541

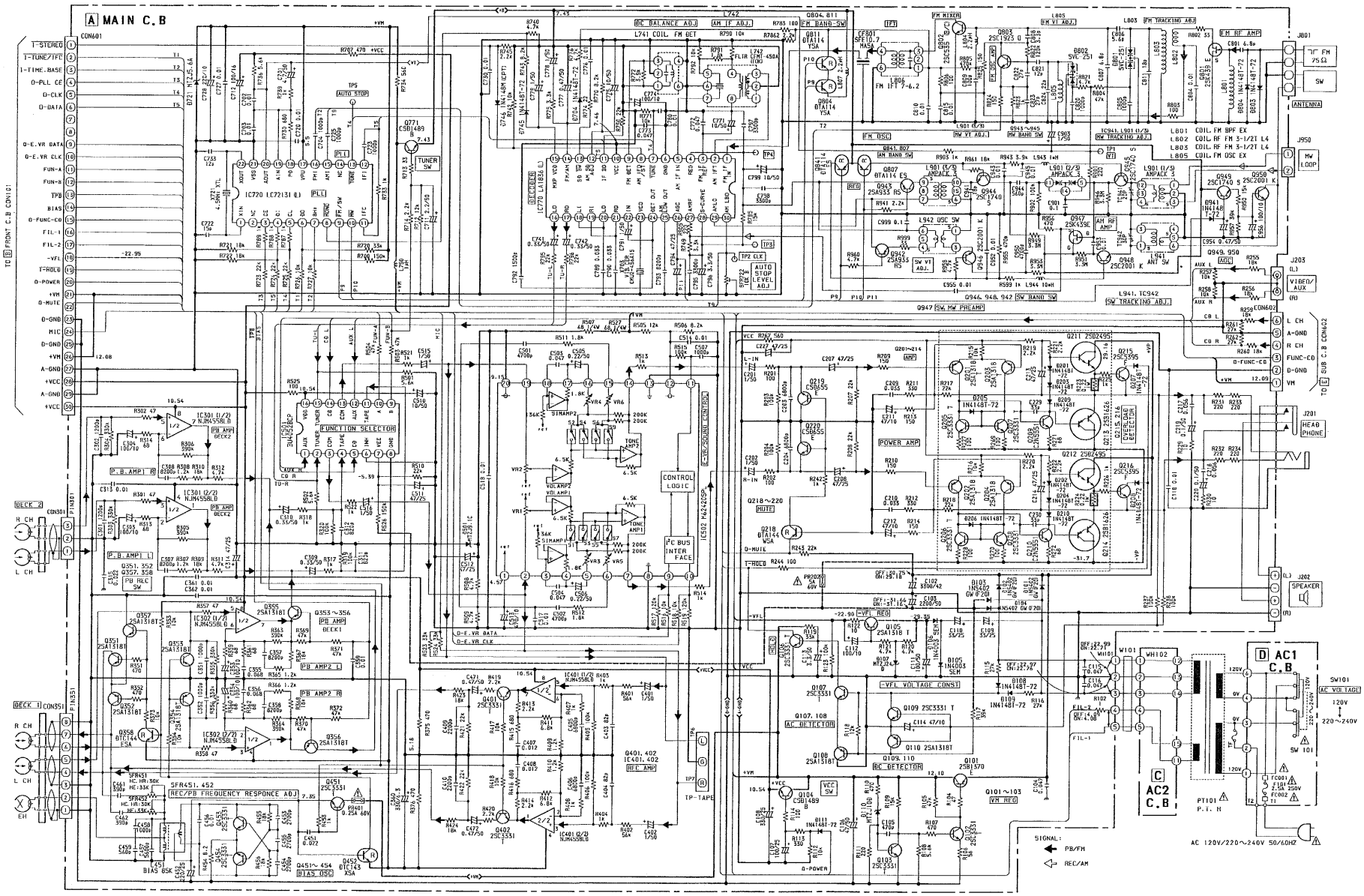
E C B

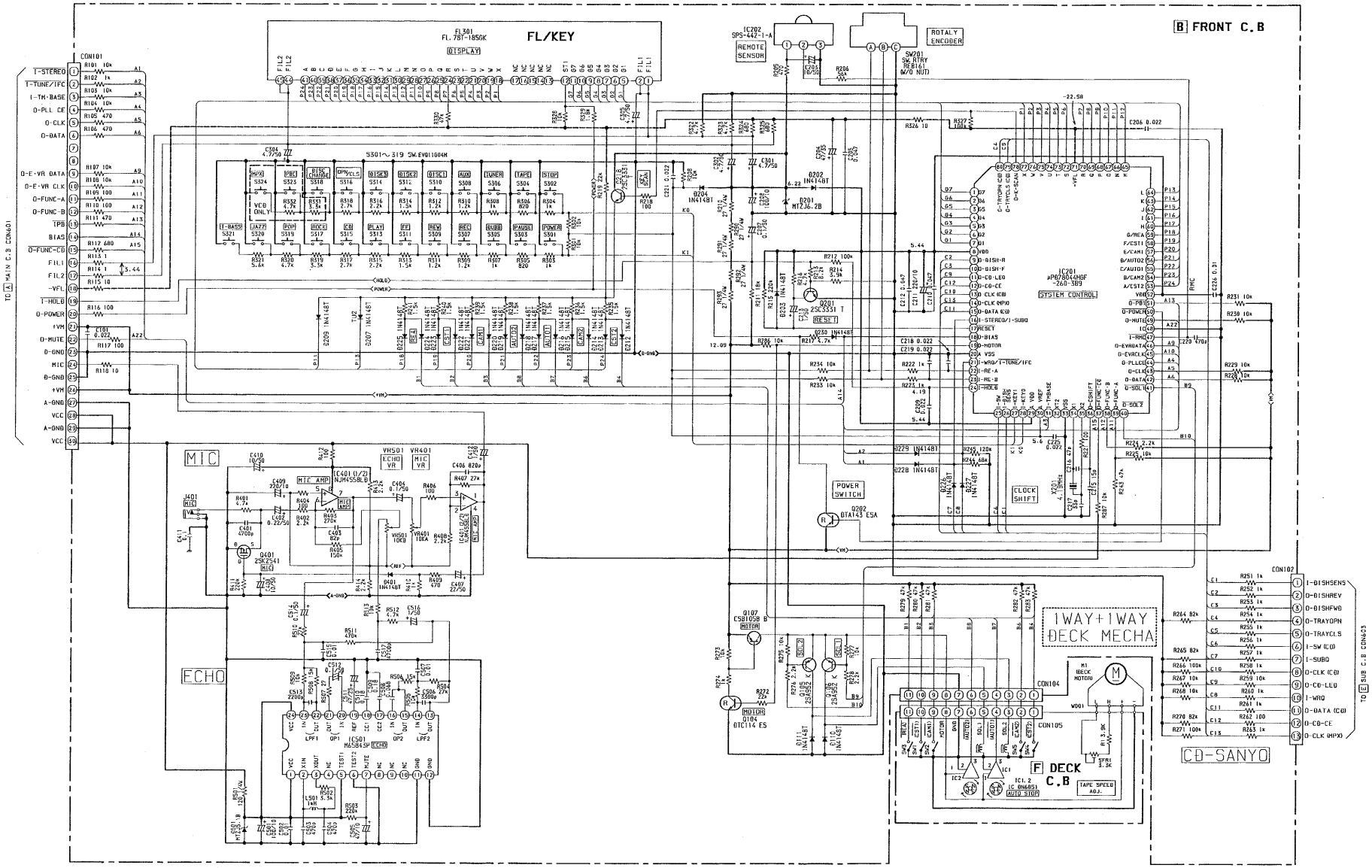
2SC5395

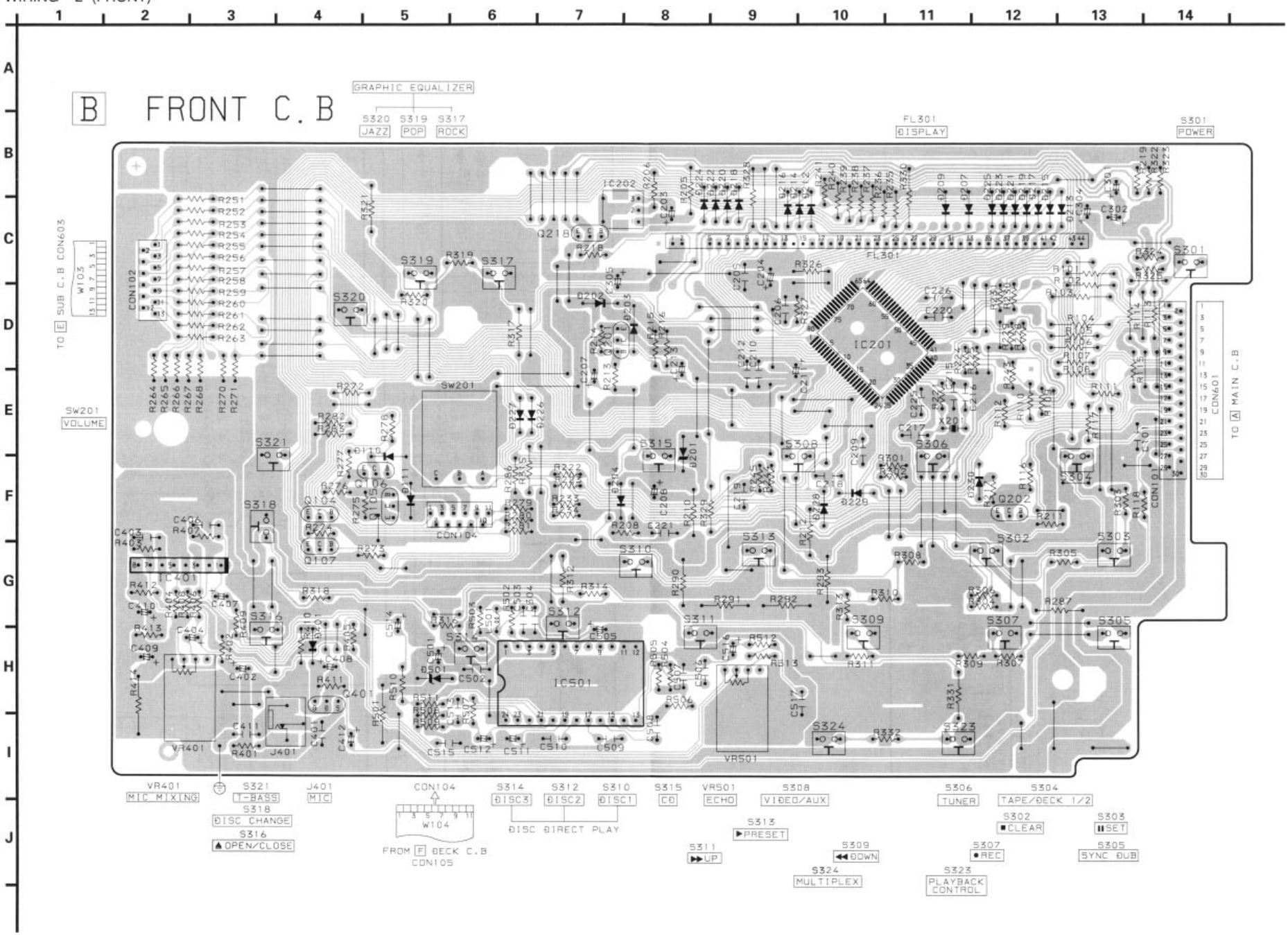
BLOCK DIAGRAM (MAIN / FRONT)



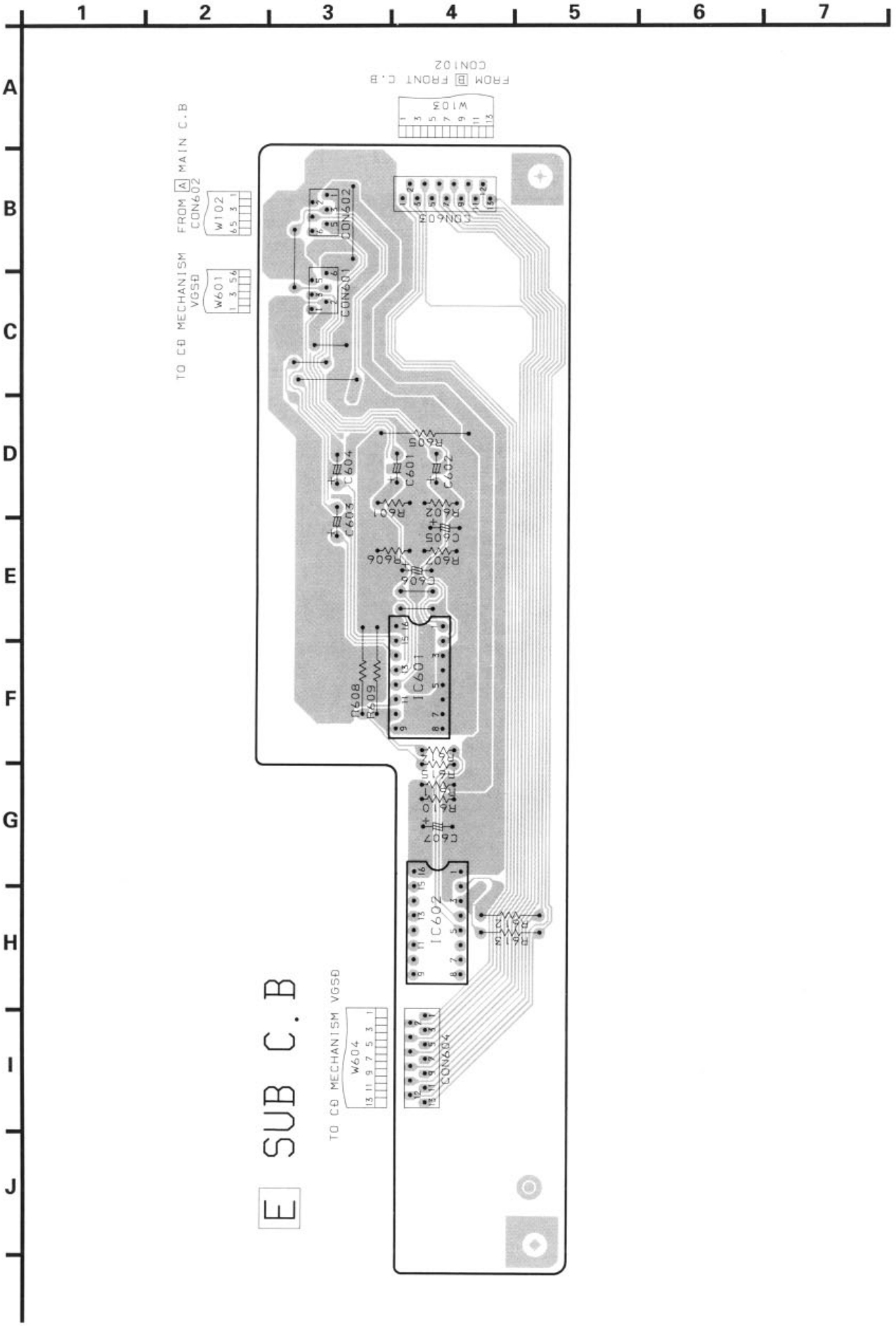

A MAIN C.B
DECK2
DECK1
CON301
CON351
PIN301
TO PIN351
J801
J201
PHONES
J203
J205
VIDEO/
AUX
TO E SUB C.B
CON602
J202
SPEAKERS
CON401
CON101
FROM B FRONT C.B
IC501
IC502
IC720
IC770
IC402

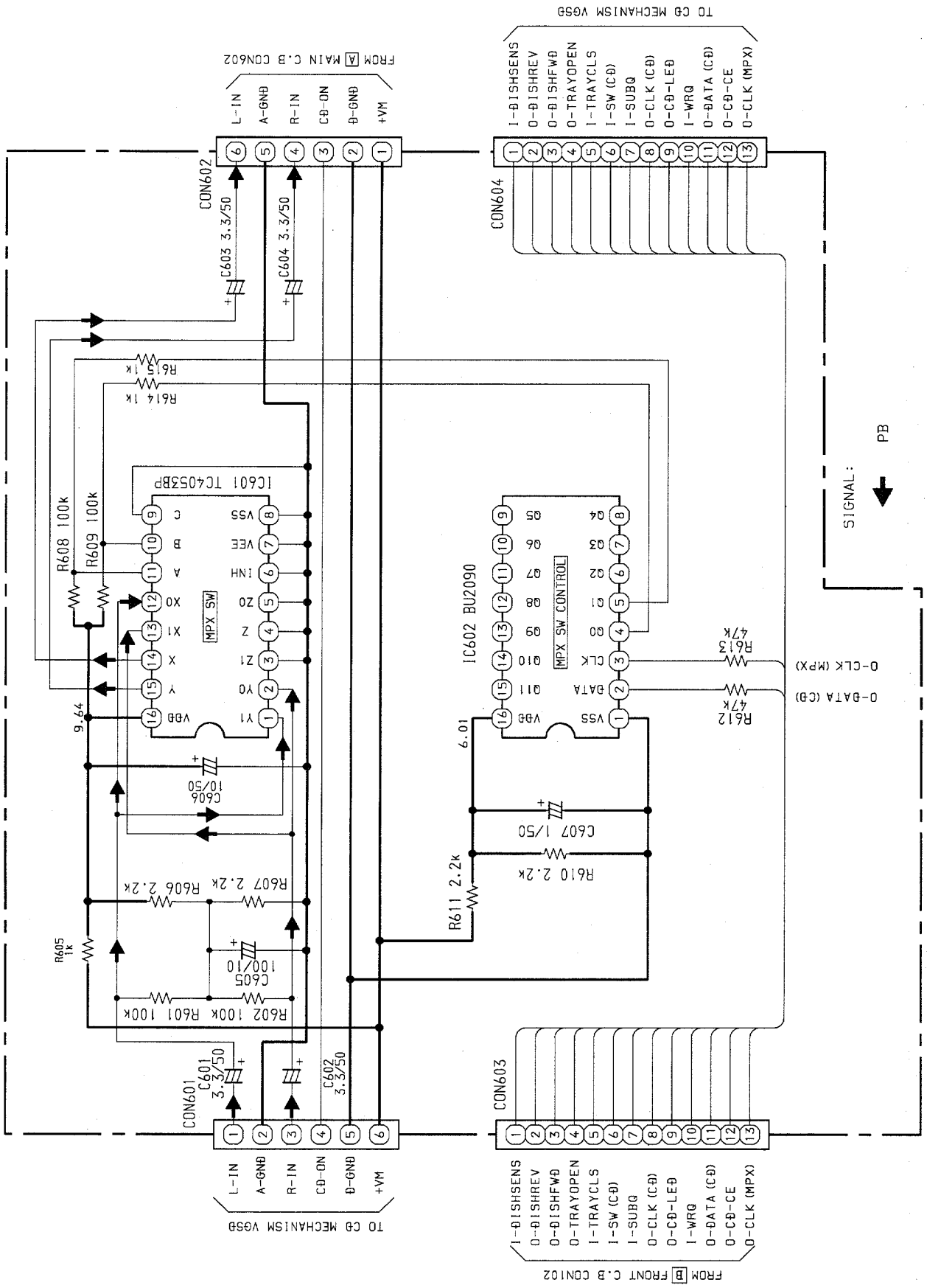

A MAIN C.B
CON601
T-STEREO
T-TUNE/FFC
T-TIME.BASE
O-PLL CE
O-CLK
O-DATA
O-E.VR DATA
O-E.VR CLK
FUN-A
FUN-B
TPB
BIAS
O-FUNC-CD
FIL-1
FIL-2
-VFL
T-HOLD
O-POWER
+VM
O-MUTE
O-GND
MIC
D-GND
+VM
A-GND
+VCC
A-GND
+VCC
TO (B) FRONT C.B CON101
IC720 LC72131 (L)
PLL
TUNER SW
AUTO STOP
FUNCTION SELECTOR
IC301 (1/2) NJM4558LD
IC301 (2/2) NJM4558LD
IC302 (1/2) NJM4558LD
IC302 (2/2) NJM4558LD
IC401 (1/2) NJM4558LD
IC401 (2/2) NJM4558LD
IC501 BU4052BCP
IC502 M62429SP
P.B.AMP1 R
P.B.AMP1 L
P.B AMP DECK2
P.B AMP DECK1
PB REC SW
REC/PB FREQUENCY RESPONCE ADJ
BIAS OSC
DECK 2 CON301
DECK 1 CON351
R CH
L CH
EH
TP-TAPE
SIMAMP2
VOLAMP2
SIMAMP1
VOLAMP1
TONE AMP2
TONE AMP1
CONTROL LOGIC
I²C BUS INTER FACE
D-E.VR/SOUND CON1801
D-E.VR DATA
D-E.VR CLK
REC AMP
AC BALANCE ADJ.
AM IF ADJ.
L741 COIL FM DET
L742
FM BAND SW
FM MIXER
IFT
FM OSC
FM IFT 7-6.2
FM TRACKING ADJ
FM RF AMP
L801 COIL FM BPF EX
L802 COIL RF FM 3-1/2T L4
L803 COIL RF FM 3-1/2T L4
L804 COIL FM OSC EX
AM BAND SW
AM RF AMP
AM OSC
AM IFT 7-6.2
AM TRACKING ADJ
AM ANT SW
SW VT ADJ.
SW TRACKING ADJ.
SW BAND SW
SW, MW PREAMP
AUTO STOP LEVEL ADJ.
AMP
POWER AMP
OVER LOAD DETECTION
MUTE
REG
-VFL REG
-VFL VOLTAGE CONST
AC DETECTION
DC DETECTOR
VCC SW
VM REG
J801 FM 75Ω
SW
ANTENNA
J950 HW LOOP
J203 VIBE/AUX (L) (R)
CON602 TO (E) SUB C.B CON402
J201 HEAD PHONE
J202 SPEAKER (L) (R)
D AC1 C.B
C AC2 C.B
SW101 AC VOLTAGE
120V
220~240V
SW 101
PT101 P.T. H
AC 120V/220~240V 50/60HZ
SIGNAL:
PB/FM
REC/AM
-22.95
12.08
7.43
9.51
10.54
-5.59
4.57
7.85
5.16
12.10
-22.90
-29.59
-31.7


FL/KEY
FL301
FL.78T-1850K
DISPLAY
B FRONT C.B
IC202
SPS-442-1-A
REMOTE SENSOR
ROTALY ENCODER
SW201
SW ROTARY
RE816J
W/O NUT
CON101
TO A MAIN C.B CDN601
S301~319 SW.EVQ11904M
IC201
μPD78044HGF
-260-3B9
SYSTEM CONTROL
Q201
2SC5331 T
RESET
Q202
DTA143 ESA
POWER SWITCH
CLOCK SHIFT
X201
4.19MHz
MIC
ECHO
IC401(1/2)
NJM4558LB
IC401(2/2)
NJM4558LB
IC501
M65849P
Q401
2SK2541
MIC
Q107
C5010SB
MOTOR
Q104
DTC114 ES
MOTOR
1WAY+1WAY
DECK MECHA
CON104
CON105
M1
DECK
MOTOR
W001
IC1
IC1, 2
BA6851
AUTO STOP
F DECK
C.B
TAPE SPEED
ADJ.
CON102
TO E SUB C.B CDN603
CD-SANYO

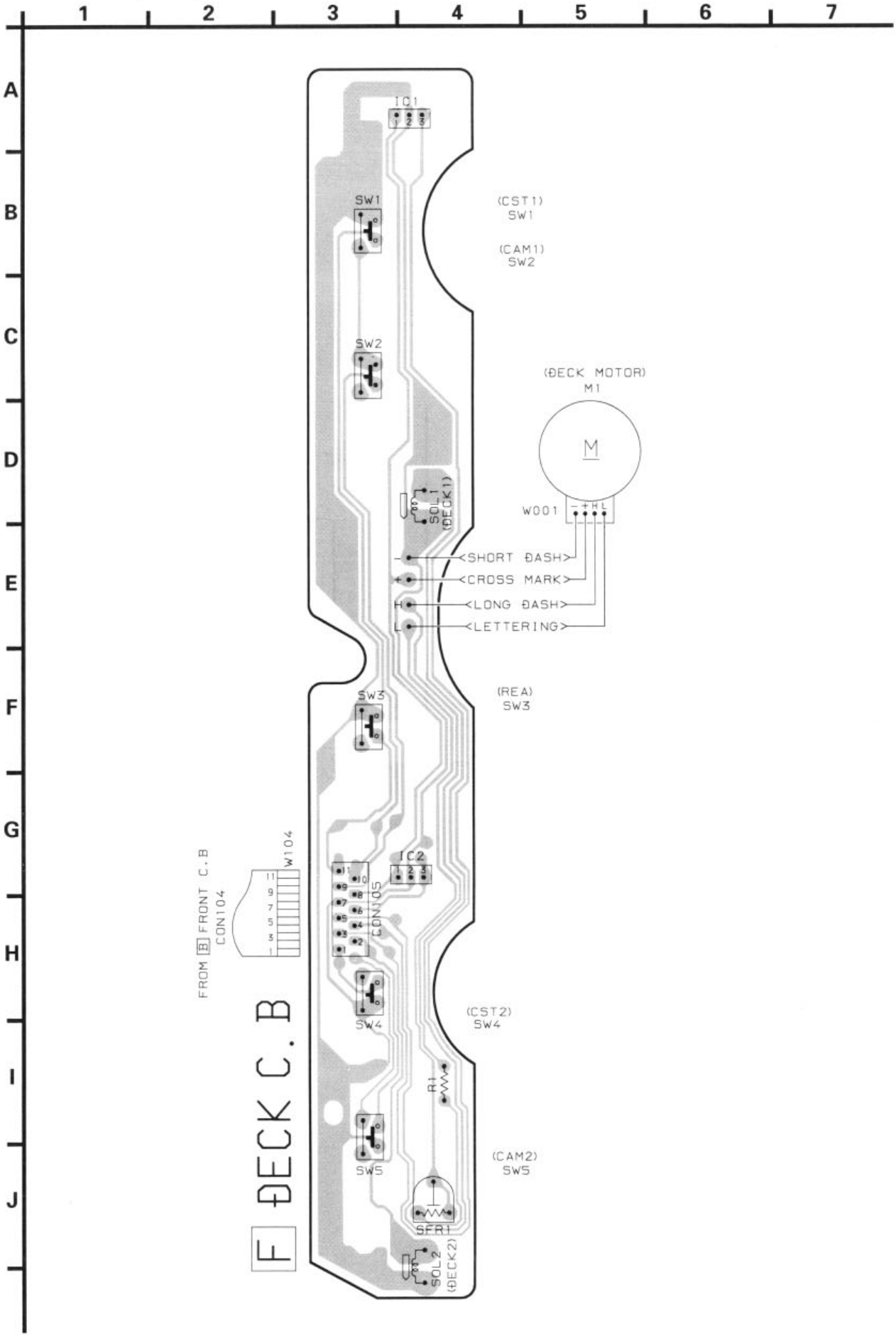

B FRONT C.B
GRAPHIC EQUALIZER
S320 JAZZ
S319 POP
S317 ROCK
FL301 DISPLAY
S301 POWER
TO E SUB C.B CON603
W103
CON102
SW201 VOLUME
SW201
S321
S318
S320
S319
S317
S316
S315
S314
S313
S312
S311
S310
S309
S308
S307
S306
S305
S304
S303
S302
S324
S323
IC201
IC401
IC501
Q218
Q202
Q107
Q106
Q105
Q104
X201
VR401
VR501
J401
CON104
W104
FROM F DECK C.B CON105
TO A MAIN C.B
CON601
VR401 MIC MIXING
S321 T-BASS
S318 DISC CHANGE
S316 ▲OPEN/CLOSE
J401 MIC
S314 DISC3
S312 DISC2
S310 DISC1
DISC DIRECT PLAY
S315 CD
VR501 ECHO
S308 VIDEO/AUX
S313 ▶PRESET
S311 ▶▶UP
S309 ◀◀DOWN
S324 MULTIPLEX
S306 TUNER
S304 TAPE/DECK 1/2
S302 ■CLEAR
S307 ●REC
S303 ❚❚SET
S305 SYNC DUB
S323 PLAYBACK CONTROL

WIRING – 3 (SUB)

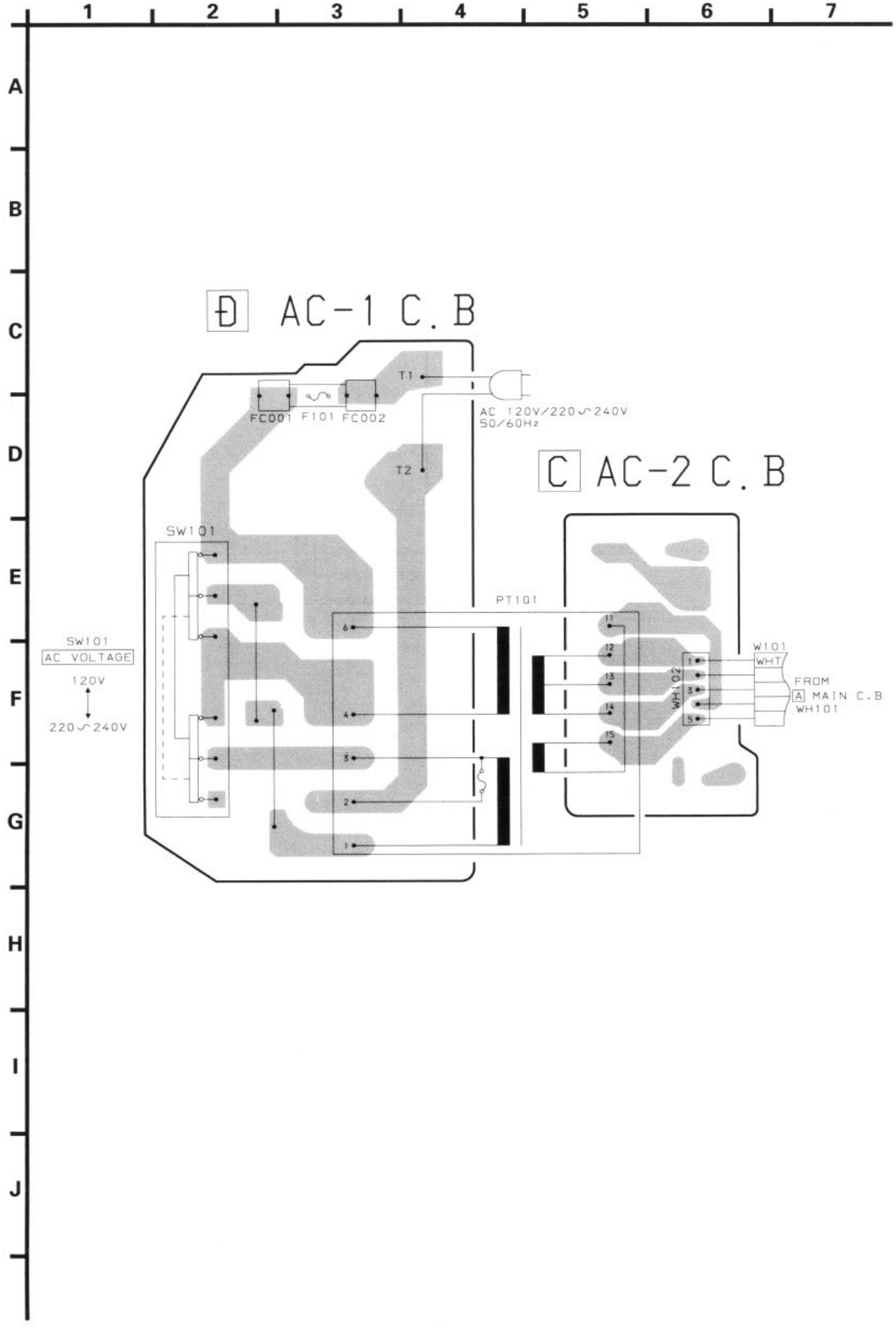

1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
FROM B FRONT C.B
CON102
W103
TO CB MECHANISM VGSB
W601
1 3 5 6
FROM A MAIN C.B
CON602
W102
6 5 3 1
CON603
CON602
CON601
C604
C603
C601
C602
R605
R601
R602
C605
R606
R607
C606
IC601
R608
R609
R610
C607
IC602
R611
R612
CON604
E SUB C.B
TO CB MECHANISM VGSB
W604
13 11 9 7 5 3 1


TO CD MECHANISM VGSD
I-DISHSENS
O-DISHREV
O-DISHFWD
O-TRAYOPEN
I-TRAYCLS
I-SW (CD)
I-SUBQ
O-CLK (CD)
O-CD-LED
I-WRQ
O-DATA (CD)
O-CD-CE
O-CLK (MPX)
CON604
FROM A MAIN C.B CON602
L-IN
A-GND
R-IN
CD-ON
D-GND
+VM
CON602
C603 3.3/50
C604 3.3/50
R615 1k
R614 1k
IC601 TC4053BP
MPX SW
R608 100k
R609 100k
R607 2.2k
R606 2.2k
R605 1k
C605 100/10
R602 100k
R601 100k
C606 10/50
9.64
IC602 BU2090
MPX SW CONTROL
6.01
C607 1/50
R610 2.2k
R611 2.2k
R613 47k
R612 47k
O-CLK (MPX)
O-DATA (CD)
SIGNAL:
PB
CON601
C601 3.3/50
C602 3.3/50
CON603
FROM B FRONT C.B CON102

WIRING – 4 (DECK)

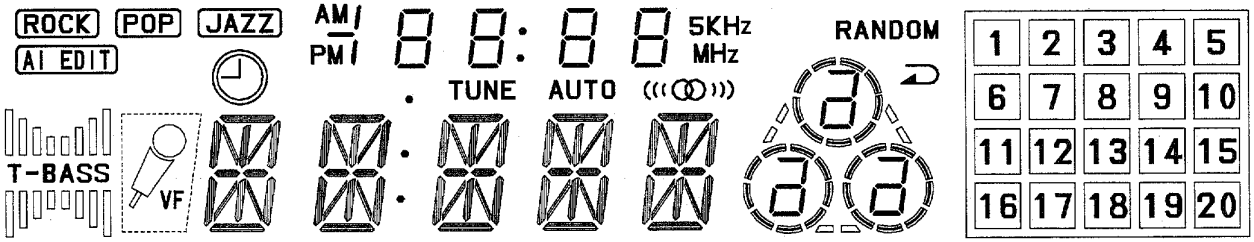


WIRING – 5 (PT)

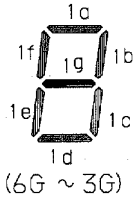

1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
Đ AC-1 C.B
T1
FC001 F101 FC002
AC 120V/220~240V
50/60Hz
T2
C AC-2 C.B
SW101
PT101
SW101
AC VOLTAGE
120V
220~240V
W101
WHT
FROM
A MAIN C.B
WH101
WH102

FL (7BT-185GK) GRID ASSIGNMENT AND ANODE CONNECTION

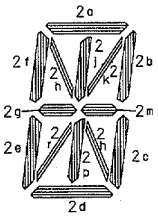
GRID ASSIGNMENT



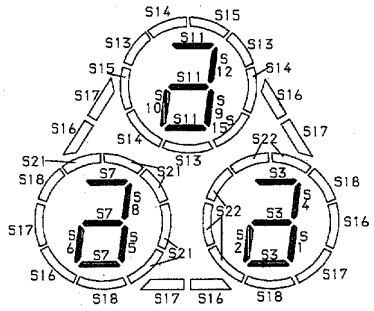
SEGMENT DESIGNATION



(6G ~ 3G)



(7G ~ 3G)



(2G)

ANODE CONNECTION

	7G	6G	5G	4G	3G	2G	1G
P1	2d	2d	2d	2d	2d	S1	20
P2	2j, 2p	2j, 2p	2j, 2p	2j, 2p	2j, 2p	S2	19
P3	2n	2n	2n	2n	2n	S3	18
P4	2r	2r	2r	2r	2r	S4	17
P5	2c	2c	2c	2c	2c	S5	16
P6	2e	2e	2e	2e	2e	S6	15
P7	2m	2m	2m	2m	2m	S7	14
P8	2g	2g	2g	2g	2g	S8	13
P9	2f	2f	2f	2f	2f	S9	12
P10	2b	2b	2b	2b	2b	S10	11
P11	2k	2k	2k	2k	2k	S11	10
P12	2h	2h	2h	2h	2h	S12	9
P13	2a	2a	2a	2a	2a	S13	8
P14	VF	•	TUNE	AUTO	((( )))	S14	7
P15	T-BASS	○	○ (below)	—	MHz	S15	6
P16	AI EDIT	—	○ (upper)	—	KHz	S16	5
P17	◔	—	—	—	5	S17	4
P18	PM	1d	1d	1d	1d	S18	3
P19	—	1e	1e	1e	1e	—	2
P20	/	1c	1c	1c	1c	—	1
P21	AM	1g	1g	1g	1g	S21	—
P22	(JAZZ)	1f	1f	1f	1f	S22	—
P23	(POP)	1b	1b	1b	1b	↩	—
P24	(ROCK)	1a	1a	1a	1a	RANDOM	—
P25	—	—	—	—	—	—	▦

IC DESCRIPTION

IC, μPD78044HGF-260-3B9

Pin No.	Pin Name	I/O	Description
1~7	G7~G1	O	FL grid output.
8	VDD	-	Power supply input.
9	O-DISH-R	O	CD turntable reverse rotation output.
10	O-DISH-F	O	CD turntable forward rotation output.
11	O-CD-LED	O	CD flash window LED ON/$\overline{\text{OFF}}$ output.
12	O-CDCE	O	CDCE output.
13	O-CLK(CD)	O	CLOCK output (CD).
14	O-CLK(MPX)	O	CLOCK output (MPX).
15	O-DATA(CD)	O	DATA output.
16	I-STEREO / I-SUBQ	I	Tuner stereo input / SUB-Q input.
17	$\overline{\text{RESET}}$	-	Reset input.
18	O-BIAS	O	DECK bias control ON/$\overline{\text{OFF}}$ output.
19	O-MOTOR	O	DECK motor ON/$\overline{\text{OFF}}$ output.
20	A VSS	-	GND.
21	I-WRQ / I-$\overline{\text{TUNE}}$ / IFC	I	CD-WRQ input / Tuner.SD input / IF data input.
22	I-RE.A	I	Rotary-encorder A input.
23	I-RE.B	I	Rotary-encorder B input.
24	I-$\overline{\text{HOLD}}$	I	Hold AD input.
25	I-SW	I	CD mecha SW AD input.
26	I-DISH SENS	I	CD turntable photo sensor A/D converter input.
27,28	I-KEY1,0	I	Key0, 1 input. (A/D)
29	A VDD	-	Power supply input.
30	A VREF	-	Reference voltage. (+5V)
31	I-TMBASE	I	Reference clock input for timer watch.
32	XT2	-	Not used.
33	VSS	-	GND.
34,35	X1,X2	I/O	511.47Hz oscillator circuit.
36	O-CSHIFT	O	Micon clock shift output. (active high)
37	O-$\overline{\text{FUNC-CD}}$	O	Power supply for CD. Output $\overline{\text{ON}}$/OFF.
38	O-FUNC-B	O	Function switch output.
39	O-FUNC-A		
40	O-$\overline{\text{SOL2}}$	O	DECK SOL2 $\overline{\text{ON}}$/OFF output.
41	O-$\overline{\text{SOL1}}$	O	DECK SOL1 $\overline{\text{ON}}$/OFF output.
42	O-DATA	O	PLL IC data output.
43	O-CLK	O	PLL IC clock output.
44	O-PLLCE	O	PLL IC chip enable.
45	O-EVRCLK	O	Electrical volume clock output.

	AUX	TUNER	CD	TAPE
O-FUNCA	0	0	1	1
O-FUNCB	0	1	0	1

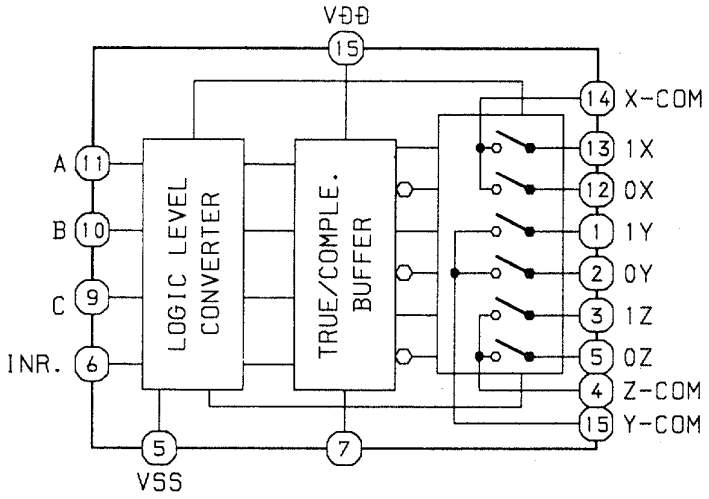
Pin No.	Pin Name	I/O	Description
46	O-EVRDATA	O	Electrical volume data output.
47	I-$\overline{\text{RMC}}$	I	System remote control signal input.
48	IC	-	Connected to GND.
49	O-MUTE	O	System mute output.
50	O-$\overline{\text{POWER}}$	O	System power supply $\overline{\text{ON}}$/OFF output.
51	O-$\overline{\text{PB1}}$	O	Playback Deck 1 and 2 switch output. "L" = Deck 1.
52	VDD	-	Power supply input.
53	A/CST2	O	FL segment output P24/DECK ($\overline{\text{CST2}}$) sw input.
54	B/CAM2	O	FL segment output P23/DECK ($\overline{\text{CAM2}}$) sw input.
55	C/AUTO1	O	FL segment output P22/DECK ($\overline{\text{AUTO1}}$) sw input.
56	D/AUTO2	O	FL segment output P21/DECK ($\overline{\text{AUTO2}}$) sw input.
57	E/CAM1	O	FL segment output P20/DECK ($\overline{\text{CAM1}}$) sw input.
58	F/CST1	O	FL segment output P19/DECK ($\overline{\text{CST1}}$) sw input.
59	G/REA	O	FL segment output P18/DECK ($\overline{\text{REA}}$) sw input.
60~70	H~R	O	FL segment output P17~P7
71	-VFL	-	Power for FL display.
72~77	S~X	O	FL segment output P6~P1.
78	O-K-SCAN	O	Key scan output .
79	O-TRYCLS (CD)	O	CD tray close data ouput.
80	O-TRYOPN (CD)	O	CD tray open data output.

IC, LC72131

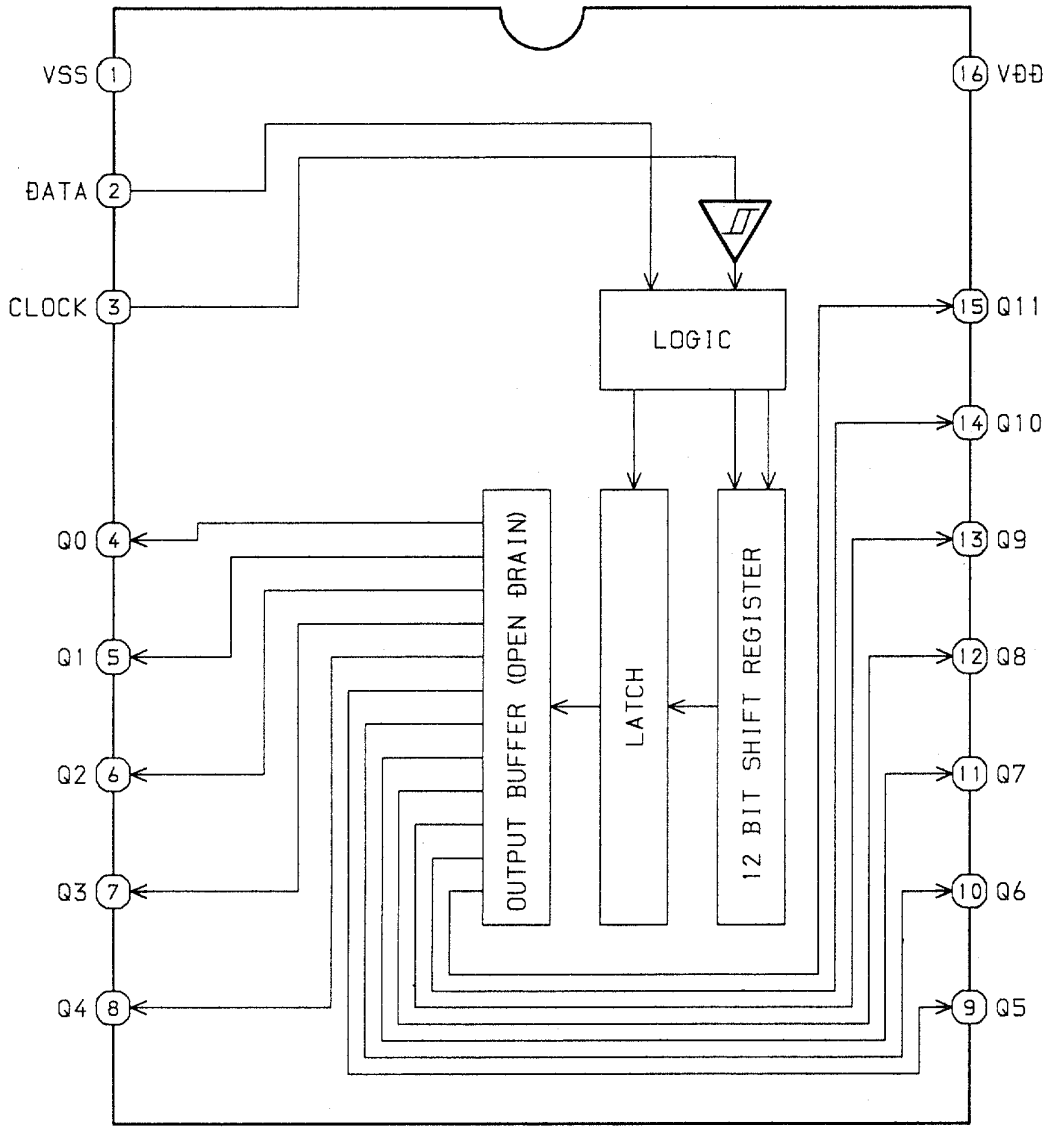
<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>1</td><td>XIN</td><td rowspan="2">I/O</td><td rowspan="2">A crystal oscillator (7.2MHz) is connected between these pins.</td></tr>
<tr><td>22</td><td>XOUT</td></tr>
<tr><td>2</td><td>NC</td><td>–</td><td>Not used.</td></tr>
<tr><td>3</td><td>CE</td><td>I</td><td>To enable the IC. Active "H".</td></tr>
<tr><td>4</td><td>DI</td><td>I</td><td>Digital data input from CPU when relevant key is operated.
Active "H".</td></tr>
<tr><td>5</td><td>CLK</td><td>I</td><td>To clock in the data DI.</td></tr>
<tr><td>6</td><td>DO</td><td>O</td><td>Digital data output to CPU.</td></tr>
<tr><td>7</td><td>TM-BASE</td><td>O</td><td>Outputs a reference clock signal (8Hz) for the clock.</td></tr>
<tr><td>8</td><td>$\overline{\text{MONO}}$ / BEAT</td><td>O</td><td>Outputs "H" when MONO / BEAT is switched.</td></tr>
<tr><td>9</td><td>$\overline{\text{FM}}$ / AM</td><td>O</td><td>Output "L" or "H" as follows:
<table>
<tr><th colspan="2">2 BAND</th><th colspan="3">3 BAND</th><th colspan="3">3 BAND</th></tr>
<tr><th>AM</th><th>FM</th><th>LW</th><th>MW</th><th>FM</th><th>MW</th><th>SW</th><th>FM</th></tr>
<tr><td>H</td><td>L</td><td>H</td><td>H</td><td>L</td><td>H</td><td>L</td><td>L</td></tr>
</table></td></tr>
<tr><td>10</td><td>$\overline{\text{MW}}$</td><td>O</td><td>Outputs "L" or "H" as follows:
<table>
<tr><th colspan="2">2 BAND</th><th colspan="3">3 BAND</th><th colspan="3">3 BAND</th></tr>
<tr><th>AM</th><th>FM</th><th>LW</th><th>MW</th><th>FM</th><th>MW</th><th>SW</th><th>FM</th></tr>
<tr><td>L</td><td>L</td><td>H</td><td>L</td><td>L</td><td>L</td><td>H</td><td>L</td></tr>
</table></td></tr>
<tr><td>11</td><td>IF-MUTE</td><td>O</td><td>To control internal counter.</td></tr>
<tr><td>12</td><td>IFIN</td><td>I</td><td>General purpose counter input.</td></tr>
<tr><td>13</td><td>$\overline{\text{TUNE}}$</td><td>I</td><td>Receives "L" when station is tuned.</td></tr>
<tr><td>14</td><td>NC</td><td>–</td><td>Not used.</td></tr>
<tr><td>15</td><td>A MIN</td><td>I</td><td>Receives the AM local oscillator frequency signal.</td></tr>
<tr><td>16</td><td>F MIN</td><td>I</td><td>Receives the FM local oscillator frequency signal.</td></tr>
<tr><td>17</td><td>VDD</td><td>–</td><td>Supply power to IC (+5V).</td></tr>
<tr><td>18</td><td>PD</td><td>O</td><td>PLL charge pump output.</td></tr>
<tr><td>19</td><td>AIN</td><td>I</td><td rowspan="2">The MOS transistor for PLL active low pass filter.</td></tr>
<tr><td>20</td><td>AOUT</td><td>O</td></tr>
<tr><td>21</td><td>VSS</td><td>–</td><td>Ground.</td></tr>
</table>

IC BLOCK DIAGRAM

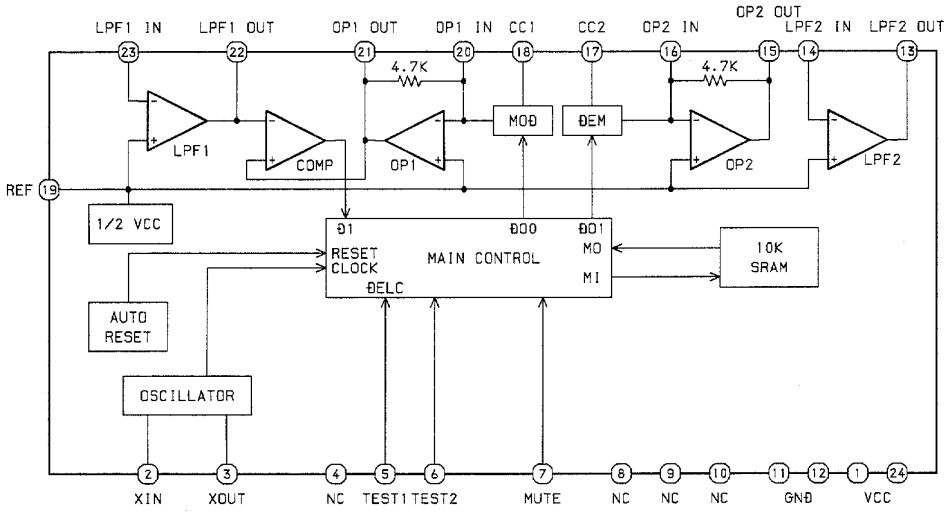
IC, TC4053BP



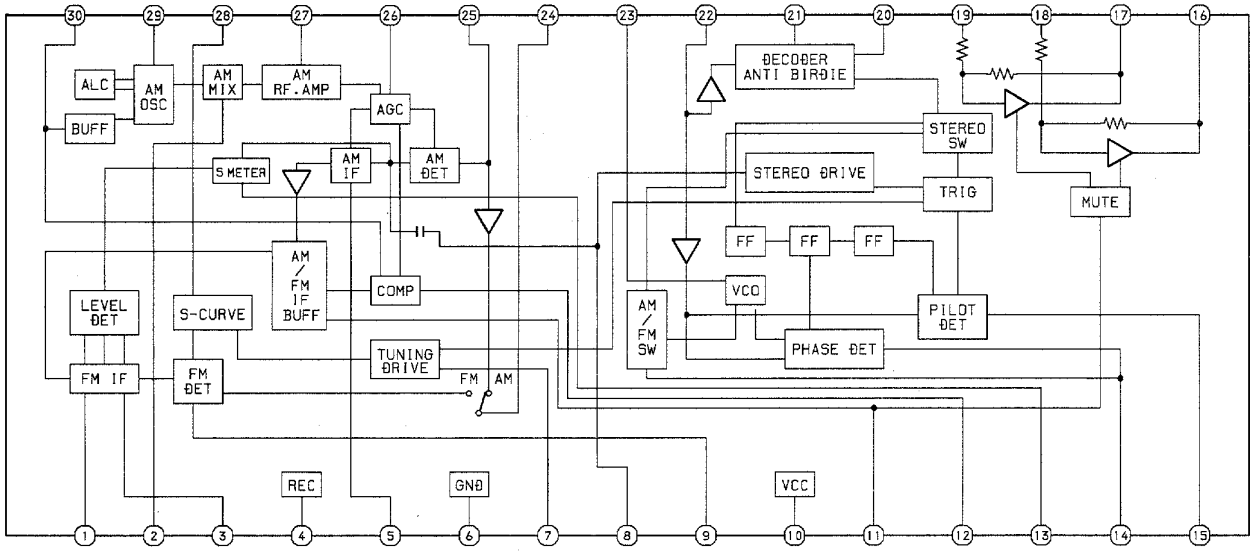
IC, BU2090



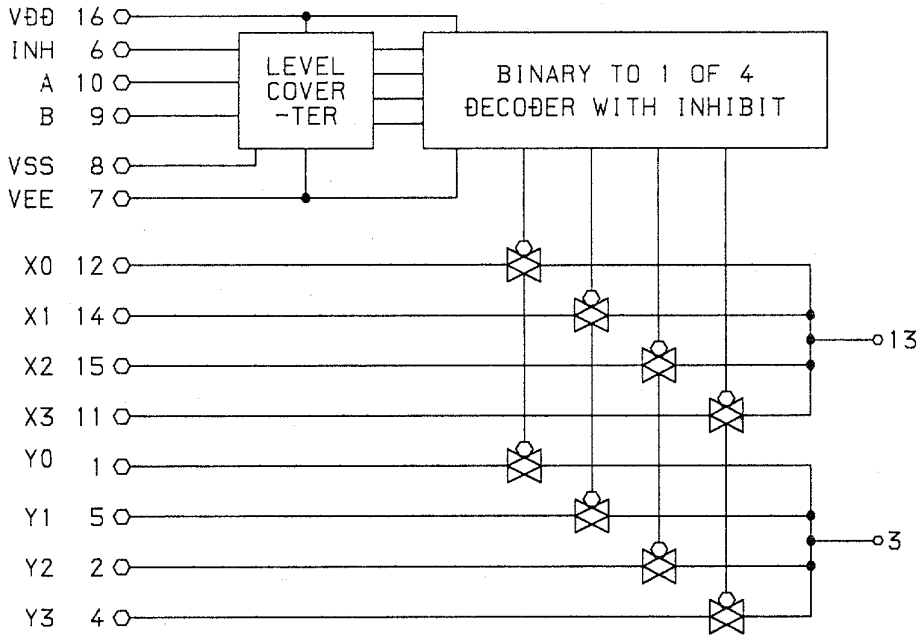
IC, M65843P



IC, LA1836

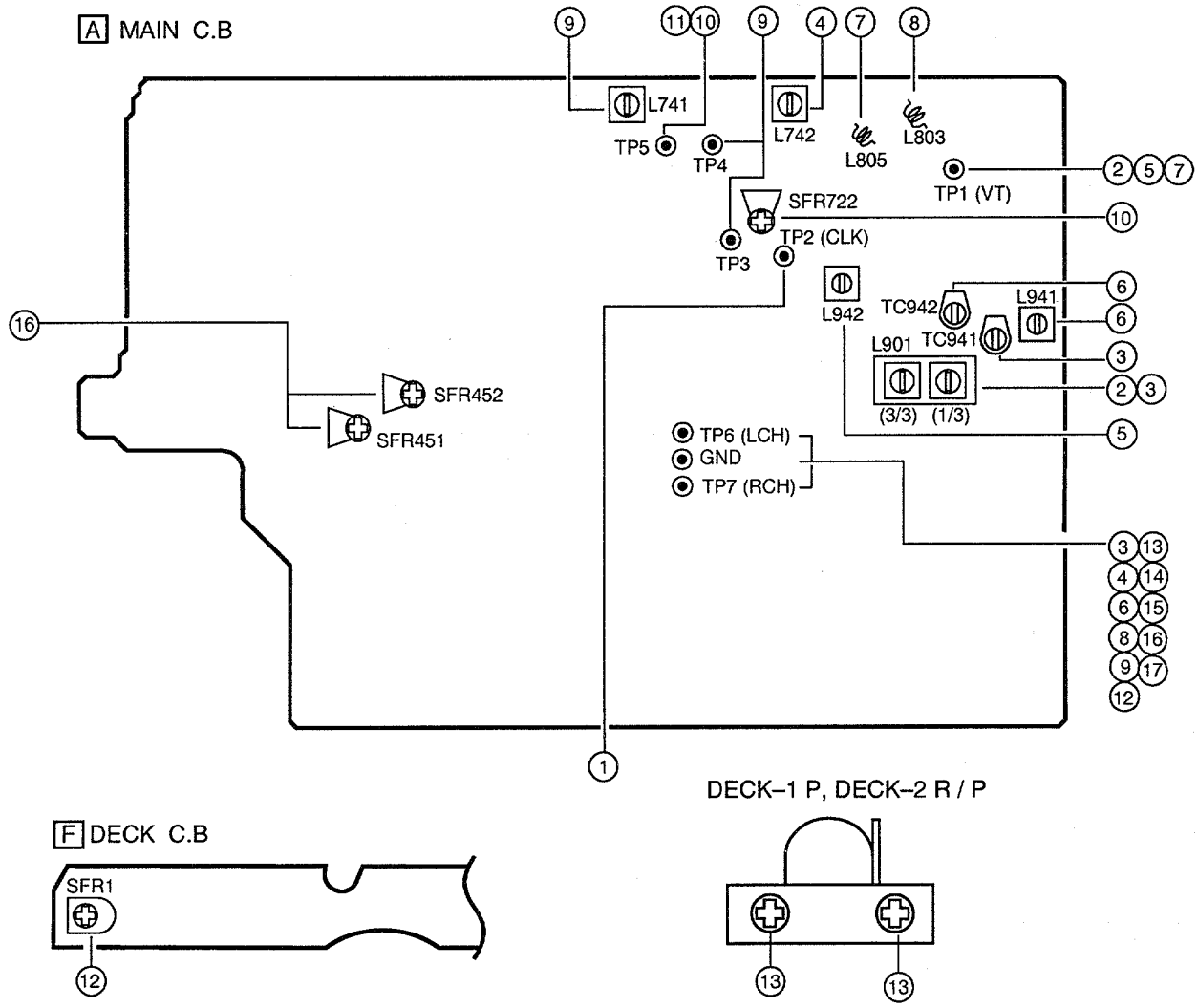


IC, BU4052BCP



TRUTH TABLE

INHIBIT	A	B	ON SWITCH
L	L	L	X0 Y0
L	H	L	X1 Y1
L	L	H	X2 Y2
L	H	H	X3 Y3
H	X	X	NONE



< TUNER SECTION >

1. Clock Frequency Check
   Settings : • Test point : TP2 (CLK)
   Method : Set to MW(AM) 1602kHz and check that the test point is 2052kHz ± 0.08kHz.

2. MW VT Adjustment
   Settings : • Test point : TP1 (VT)
   • Adjustment location : L901(3/3)
   Method : Set to MW 1710kHz and adjust L901(3/3) so that the test point is 8.5V ± 0.05V.

3. MW Tracking Adjustment
   Settings : • Test point : TP6(Lch), TP7(Rch)
   • Adjustment location :
   L901(1/3) 603kHz
   TC941 ..... 1404kHz
   Method : Set up TC941 to center before adjustment, the level at 603kHz is adjust to maximum by L901(1/3). Then the level at 1404kHz is adjust to maximum by TC941.

4. AM IF Adjustment
   Settings : • Test point : TP6(Lch), TP7(Rch)
   • Adjustment location :
   L742..... 450kHz

5. SW VT Adjustment
   Settings : • Test point : TP1 (VT)
   • Adjustment location : L942
   Method : Set to SW 17.9MHz and adjust L942 so that the test point is 7.0V ± 0.05V.

6. SW Tracking Adjustment
   Settings : • Test point : TP6(Lch), TP7(Rch)
   • Adjustment location :
   L941 ..... 5.9MHz
   TC942 ..... 17.9MHz
   Method : Set up TC942 to center before adjustment. The level at 5.9MHz is adjust to maximum by L941. Then the level at 17.9MHz is adjust to maximum by TC942.

7. FM VT Adjustment
   Settings : • Test point : TP1 (VT)
   • Adjustment location : L805
   Method : Set to FM 87.5MHz, 108.0MHz and check that the test point is more than 1.0V(87.5MHz) and adjust L805 so that the test point becomes 7.0V ± 0.05V (108.0MHz).

8. FM Tracking Adjustment
   Settings : • Test point : TP6(Lch), TP7(Rch)
   • Adjustment location : L803 ..... 87.5MHz
   Method : The level at 87.5MHz is adjusted by L803 so that the test point is 0 ± 6dB (87.5MHz) and 4dB ± 6dB (108.0MHz).

9. DC Balance / Mono Distortion Adjustment
   Settings : • Test point : TP3, TP4 (DC balance)
   : TP6, TP7 (Distortion)
   • Adjustment location : L741
   • Input level : 54dB
   Method : Set to FM 98.0MHz and adjust L741 so that the voltage between TP3 and TP4 becomes 0V ± 0.04V. Next, check that the distortion is less than 1.3%.

10. Auto Stop Level Adjustment
    Settings : • Test point : TP5
    • Adjustment location : SFR722
    • Input level : 54dB
    Method : Set to FM 98.0MHz and adjust voltage low (about 0.1V) by SFR722. After that voltage high (about 7.0V) by 2dB down.

11. Auto Stop Level Check

    MW
    Settings : • Test point : TP5
    • Input level : 54dB
    Method : Set to AM 999kHz and check that the test point is 58 +10/-15dB.

    SW
    Settings : • Test point : TP5
    • Input level : 54dB
    Method : Set to SW 12.0MHz and check that the test point is 45dB ± 10dB.

    FM
    Settings : • Test point : TP5
    • Input level : 54dB
    Method : Set to FM 98.0MHz and check that the test point is 20dB +10/-5dB.

< DECK SECTION >

12. Tape Speed Adjustment
    Settings : • Test tape : TTA–410
    • Test point : TP6, TP7
    • Adjustment location : SFR1
    Method : Play back the test tape and adjust SFR1 so that the frequency counter reads 3000Hz ± 5Hz.

13. Head Azimuth Adjustment
    Settings : • Test tape : TTA–410
    • Test point : TP6, TP7
    • Adjustment location : Head azimuth adjustment screw
    Method : Play back the 10kHz signal of the test tape and adjust screw so that the output becomes maximum. Next, perform on each FWD and REV PLAYmode.

14. PB Frequency Response Check (DECK 1, DECK 2)
    Settings : • Test tape : TTA–410
    • Test point : TP6, TP7
    Method : Play back the 315Hz and 10kHz signals of the test tape and check that the output ratio of the 10kHz signal with respect to that of the 315Hz signal is 0 ± 5dB

15. PB Sensitivity Check (DECK 1, DECK 2)
    Settings : • Test tape : TTA–200
    • Test point : TP6, TP7
    Method : Play back the test tape and check that the output level of the test point is 150mV ± 3.0dB .

16. REC/PB Frequency Response Adjustment
    Settings : • Test tape : TTA–602
    • Test point : TP6, TP7
    • Input signal : 1kHz / 10kHz (LINE IN)
    • Adjustment location : SFR451 (Lch)
    SFR452 (Rch)
    Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP6, TP7 becomes 11mV. Record and play back the 1kHz and 10kHz signals and adjust SFRs so that the output of the 10kHz signals becomes 12mV (+1.0dB) ± 0.5dB with respect to that of the 1kHz signal.

17. REC/PB Sensitivity Check
    Settings : • Test tape : TTA–602
    • Test point : TP6, TP7
    • Input signal : 1kHz (LINE IN)
    Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP6, TP7 becomes 11mV. Record and play back the 1kHz signals and check that the output is 10mV (-1.0dB) ± 2.5dB.

PRACTICAL SERVICE FIGURE

<TUNER SECTION>

<FM SECTION>

IHF Sensitivity :	Less than 9dB
(THD 3%)	[at 87.5MHz]
	Less than 8dB
	[at 98.0MHz]
	Less than 10dB
	[at 108.0MHz]
S/N 50dB Quieting sensitivity :	
	Less than 35dB
	[at 98.0MHz]
Signal to noise ratio :	More than 60dB (STEREO)
	More than 70dB (MONO)
	[at 98.0MHz]
Distortion :	Less than 2.0% (STEREO)
	Less than 1.3% (MONO)
	[at 98.0MHz]
Auto stop level :	25dB ± 10dB
	[at 98.0MHz]
Stereo separation :	More than 28dB
	[at 98.0MHz]
Intermediate frequency :	10.7MHz

<AM(MW) SECTION>

Sensitivity :	Less than 64dB
(S/N 20 dB)	[at 603kHz]
	Less than 58dB
	[at 999 / 1404kHz]
Signal to noise ratio :	More than 30dB
	[at 999kHz]
Distortion :	Less than 1.5%
	[at 999kHz]
Auto stop level :	58dB +10/-15dB
	[at 999kHz]
Intermediate frequency :	450kHz

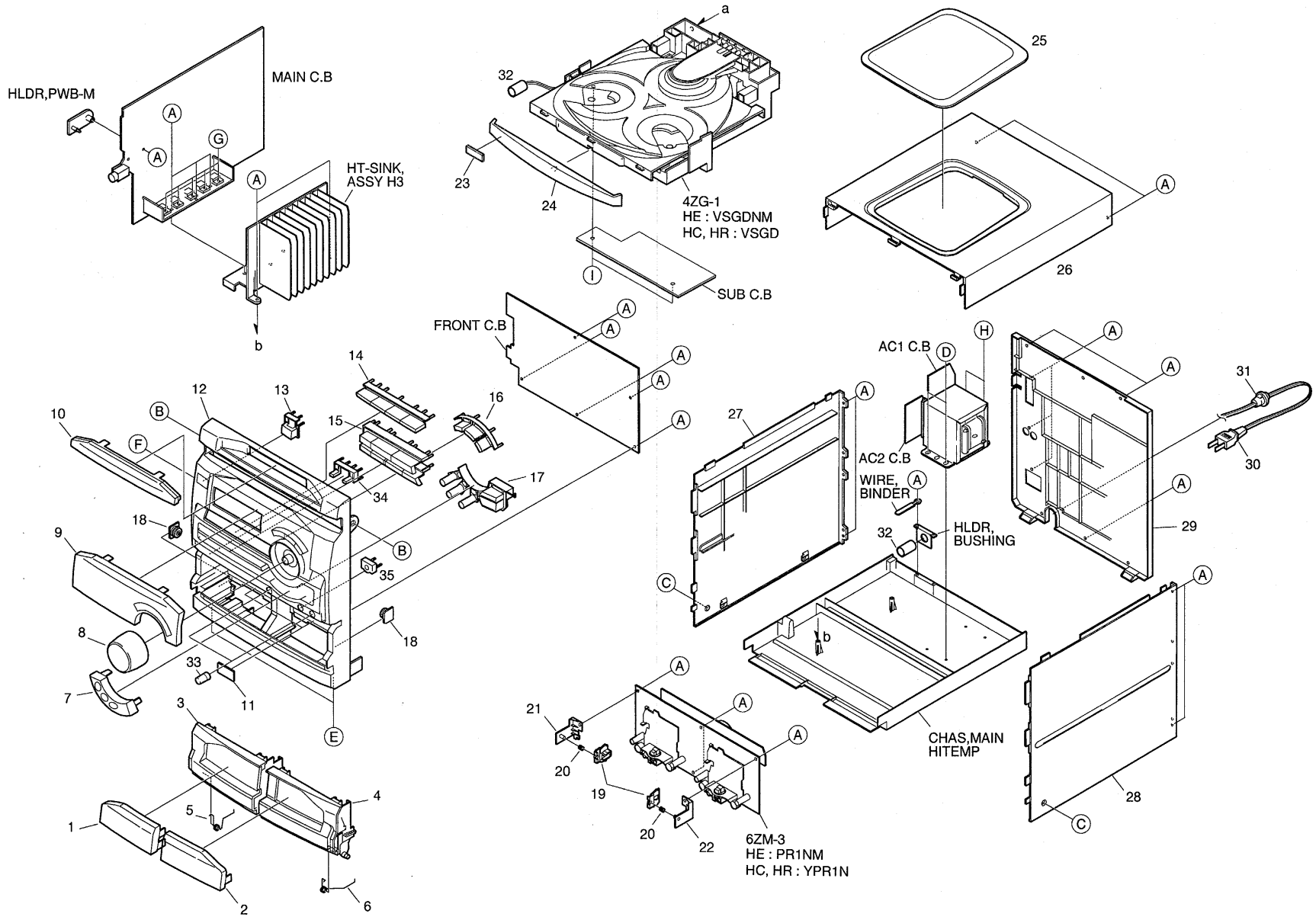
<AM(SW) SECTION>

Sensitivity :	Less than 47dB
(S/N 20 dB)	[at 5.9MHz]
	Less than 41dB
	[at 12.0 / 17.9MHz]
Intermediate frequency :	450kHz

<DECK SECTION>

Tape speed :	3000Hz ± 45Hz
Wow & flutter :	Less than 0.25%
	(W.R.M.S)
Take-up torque :	30 ~ 55g-cm
	(FWD, REV)
F.F & REW torque :	75 ~ 180g-cm
Back tension :	2 ~ 7g-cm
	(FWD, REV)
PB output level :	2.8V ± 3dB
	(SP OUT 2V)
REC/PB output level :	2.0V ± 3.5dB
	(SP OUT 2V, 0VU)
Distortion (REC/PB) :	Less than 2.0%
	(NORMAL, 0VU)
Noise level (PB) :	Less than 25mV
	(NORMAL, SP OUT 2V, DIN AUDIO)
Noise level (REC/PB) :	Less than 30mV
	(NORM, SP OUT 2V, DIN AUDIO)
Crosstalk :	More than 55dB
	(1kHz, NORMAL)
Channel separation :	More than 35dB
	(1kHz, NORMAL)
Erasing ratio :	More than 55dB
	(at 125Hz, 10VU, NORMAL)
Test tape :	TTA-602 (NORMAL)

MECHANICAL EXPLODED VIEW 1 / 1

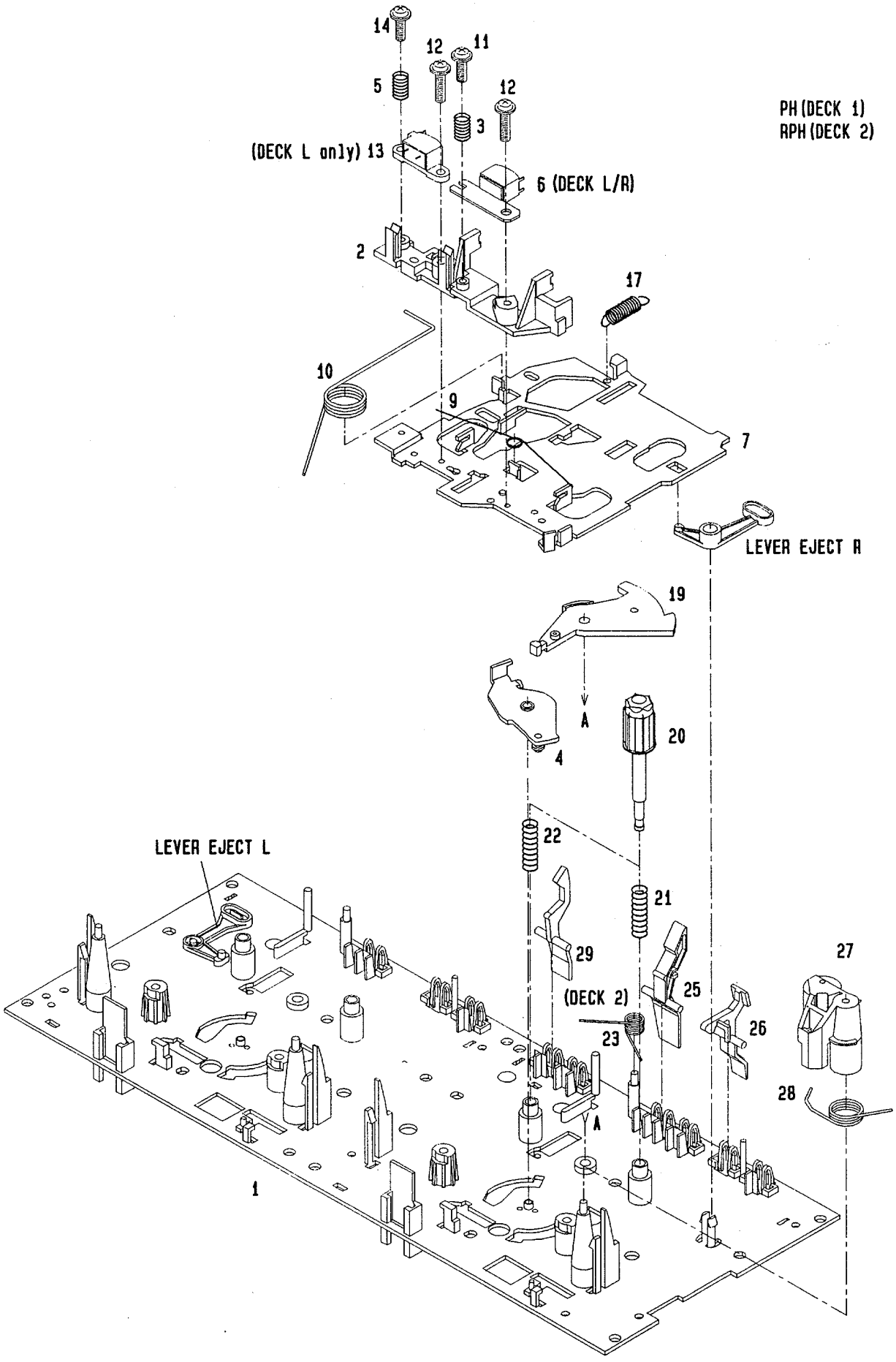


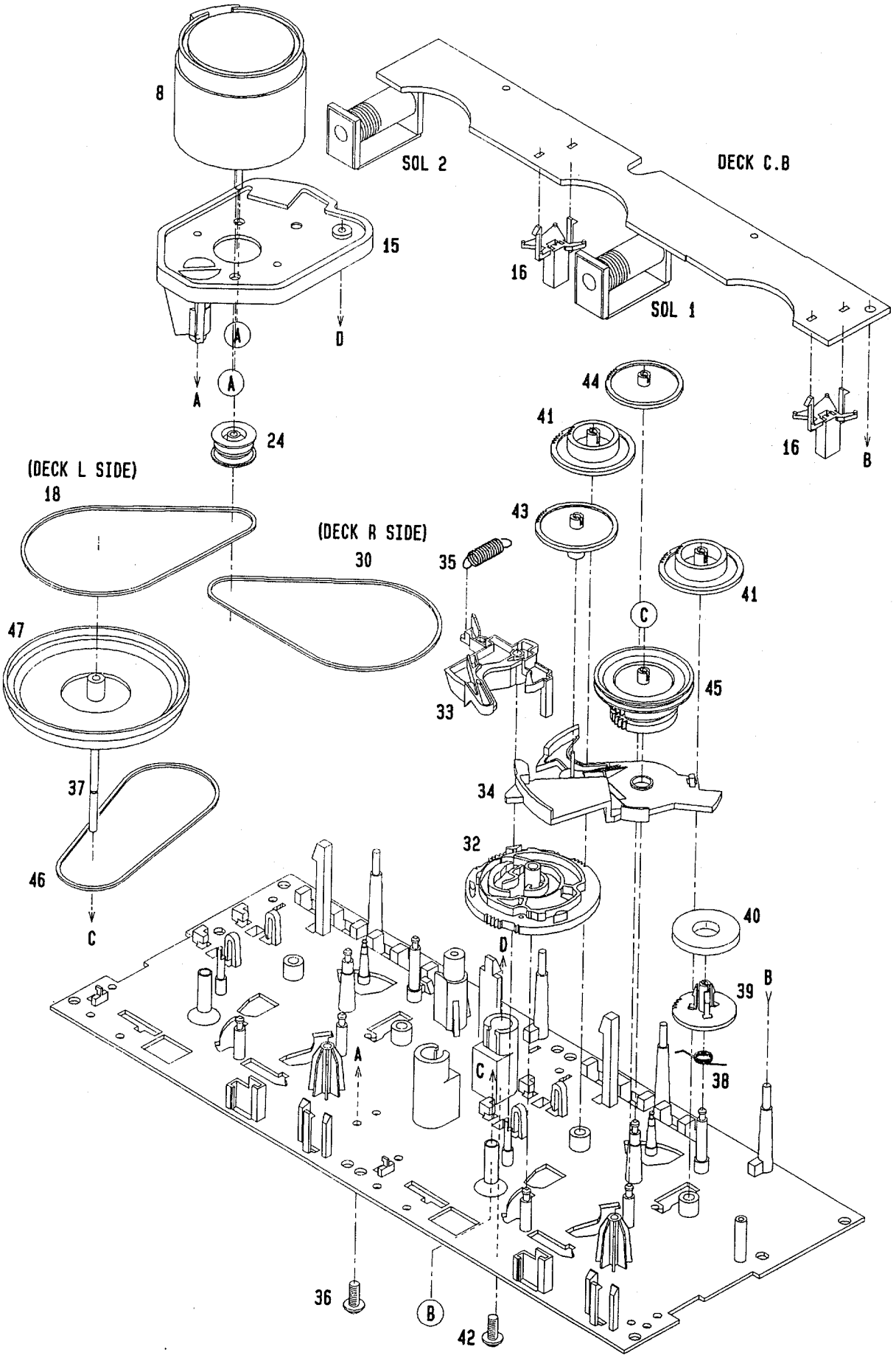
MECHANICAL PARTS LIST 1 / 1

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-NF8-014-010		WINDOW,CASS 1
2	87-NF8-015-010		WINDOW,CASS 2
3	87-NF8-025-010		BOX,CASS 1H
4	87-NF8-026-010		BOX,CASS 2H
5	82-NF5-218-010		SPR-T,EJECT 1 (SIN)
6	82-NF5-219-010		SPR-T,EJECT 2 (SIN)
7	87-NF8-019-010		PANEL,CD
8	87-NF8-012-010		KNOB,RTRY VOL
9	87-NH8-003-010		WINDOW,DISPLAY H
10	87-NF8-016-010		WINDOW,CD
11	81-532-080-010		LABEL, CASS. COMPT
12	87-NH8-001-110		CABI,FR HR
13	87-NF8-005-010		KEY,POWER
14	87-NF8-008-010		KEY,FUN
15	87-NF8-010-110		KEY,OPE
16	87-NF8-007-010		KEY,GEQ
17	87-NF8-006-010		KEY,CD
18	87-NF8-220-010		DMPR,150
19	82-NF5-229-010		PLATE,LOCK
20	86-NF9-224-010		SPR-C,LOCK
21	87-NF4-216-010		HLDR,LOCK 1
22	87-NF4-217-010		HLDR,LOCK 2
23	82-NE6-067-010		BADGE,AIWA 30N
24	87-NH8-005-010		PANEL,TRAY
25	86-NFZ-001-010		WINDOW,TOP
26	87-NF8-045-010		PANEL,TOP ST
27	87-NF8-042-010		PANEL,LEFT 2 ST
28	87-NF8-044-010		PANEL,RIGHT 2 ST
29	87-NH8-018-010		CABI,REAR HCST<HC>
29	87-NH8-019-010		CABI,REAR HEJSTNM<HEJ>
29	87-NH8-017-010		CABI,REAR HRST<HR>
⚠ 30	87-A80-083-010		AC CORD,HC BLK<HC>
⚠ 30	87-050-079-010		AC-CORD ASSY,E<HR,HEJ>
31	87-085-185-010		BUSHING, AC CORD (E)
32	87-003-317-010		F-BEAD,F0H2515-LG7
33	87-NB7-021-010		KNOB,RTRY MIC
34	87-NH8-004-010		KEY,PBC
35	87-NF8-020-010		PLATE,MIC
A	87-067-703-010		TAPPING SCREW, BVT2+3-10
B	87-721-097-410		QT2+3-12 GLD
C	87-B10-091-010		UTT2+3-10 W/O BLK
D	87-743-175-410		UT2+4-16
E	87-067-758-010		BVT2+3-12 W/O SLOT
F	87-723-096-410		QT2+3-10W/O SLOT BL
G	87-067-579-010		TAPPING SCREW, BVT2+3-8
H	87-741-172-410		UT2+4-12 W/O SLOT
I	87-084-100-010		RIVET,NYL 3-6.5

TAPE MECHANISM EXPLODED VIEW 1 / 1



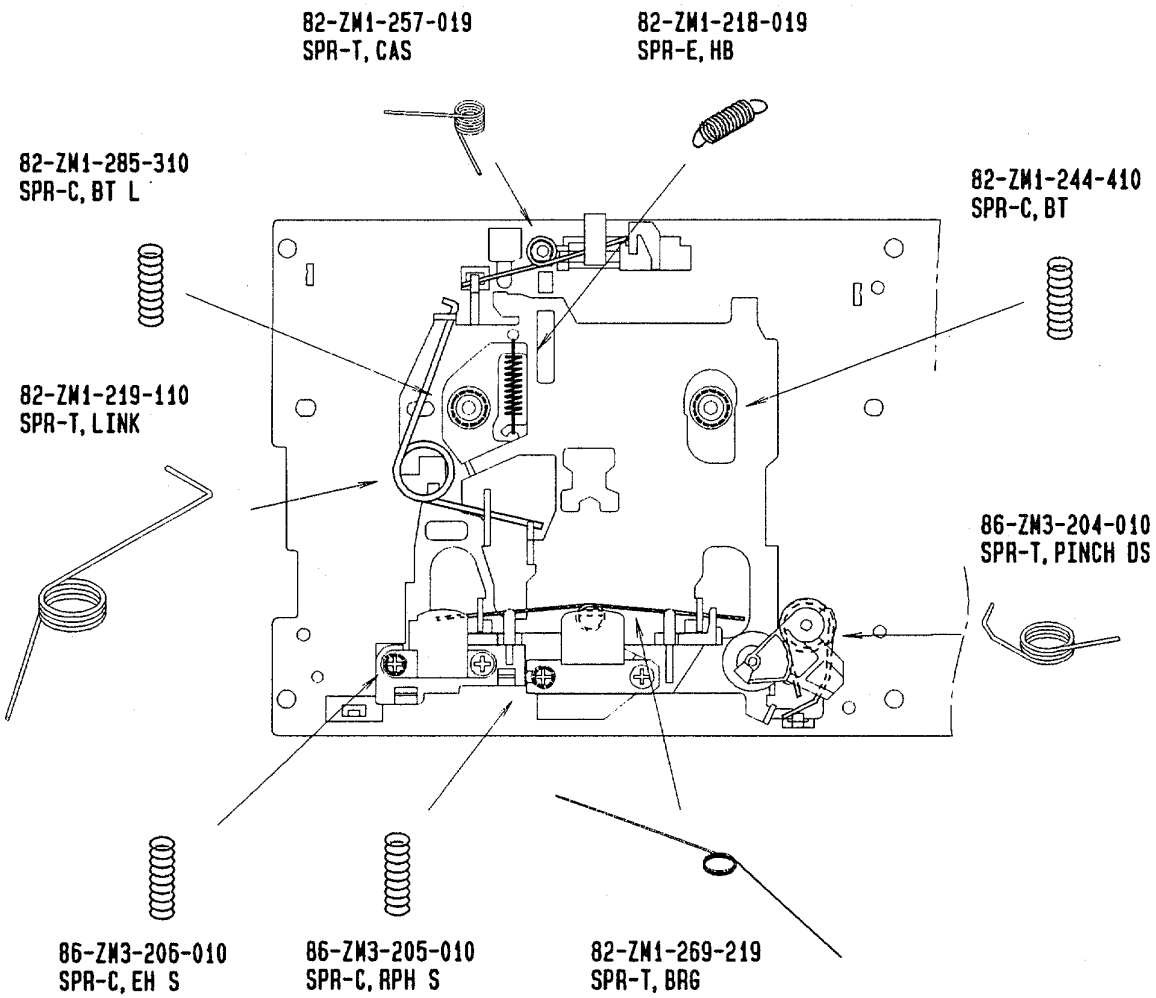

8
SOL 2
DECK C.B
15
16
SOL 1
A
D
A
A
24
44
41
16
B
(DECK L SIDE)
18
(DECK R SIDE)
30
43
35
41
47
C
45
33
37
34
32
46
C
40
D
39
B
A
C
38
36
B
42

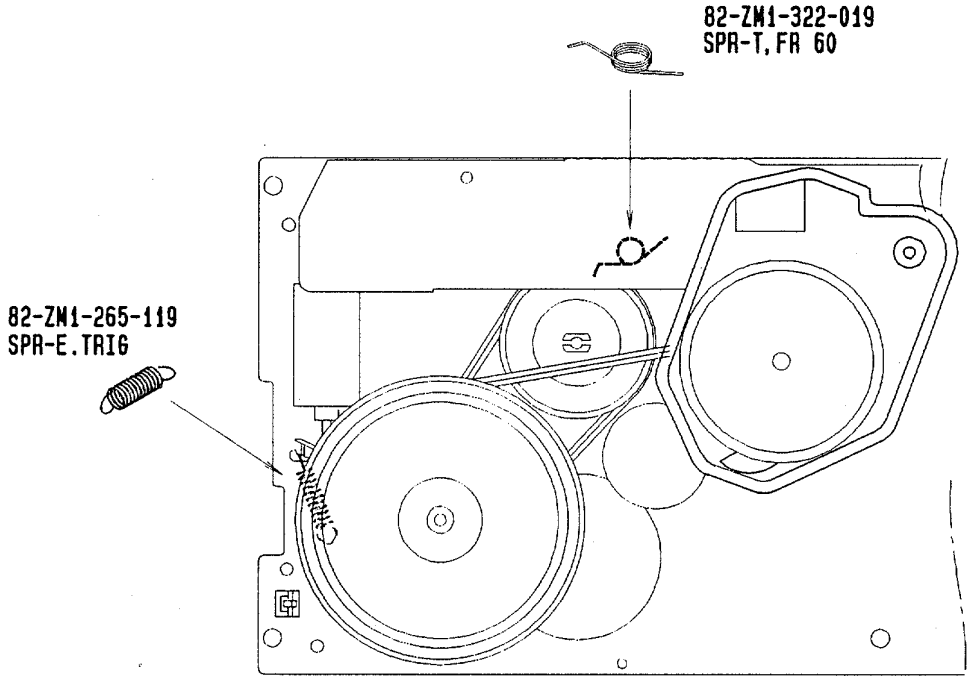
TAPE MECHANISM PARTS LIST 1 / 1

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-ZM3-212-010		CHAS ASSY,SS
2	86-ZM3-202-010		BASE,HEAD S
3	86-ZM3-205-010		SPR-C,RPH S
4	82-ZM1-333-210		PLATE,LINK 2
5	86-ZM3-206-010		SPR-C,EH S
6	87-A90-403-019		HEAD,RPH MS15R
7	86-ZM3-201-010		CHAS,HEAD S
8	87-045-347-019		MOT,SHU2L 70(M1)
9	82-ZM1-269-219		SPR-T,BRG
10	82-ZM1-219-110		SPR-T,LINK
11	86-ZM3-209-010		S-SCREW,ASIMUTHS
12	86-ZM3-207-010		S-SCREW,RPH
13	87-A90-404-019		HEAD,EH LE15B
14	86-ZM3-208-010		S-SCREW,EH
15	86-ZM3-203-010		HLDR,MOTS
16	82-ZM1-245-210		HLDR,IC
17	82-ZM1-218-019		SPR-E,HB
18	82-ZM3-211-010		BELT,RS
19	82-ZM1-222-219		LVR,PLAY
20	82-ZM1-217-419		REEL TABLE
21	82-ZM1-244-519		SPR-C,BT
22	82-ZM1-285-410		SPR-C,BT L
23	82-ZM1-257-019		SPR-T,CAS
24	82-ZM3-221-010		PULLEY,MOT 2M
25	82-ZM1-242-019		LVR,CAS
26	82-ZM1-243-019		LVR,STOP
27	82-ZM1-344-119		LVR ASSY,PINCH
28	86-ZM3-204-010		SPR-T,PINCHDS
29	82-ZM1-240-119		LVR,REC (DECK 2)
30	86-ZM3-210-010		BELT,RS
32	82-ZM3-305-119		GEAR,CAM M2
33	82-ZM1-227-319		LVR,TRIG
34	82-ZM3-306-110		LVR,FR M2
35	82-ZM1-265-119		SPR-E,TRIG
36	87-761-073-419		VFT2+2.6-6 W/O SLOT
37	82-ZM1-239-019		CAPSTAN N 2.2-41.7
38	82-ZM1-322-019		SPR-T,FR60
39	82-ZM1-220-219		GEAR,IDLER
40	82-ZM3-616-019		RING MAGNET 4
41	82-ZM1-216-319		GEAR,REEL
42	86-ZM3-213-010		S-SCREW,HLDR,MOT 3
43	82-ZM1-225-219		GEAR,FR
44	82-ZM1-226-019		GEAR,REW
45	82-ZM3-333-310		SLIP DISK ASSY 2
46	82-ZM1-338-010		BELT FR4
47	82-ZM1-349-019		FLY-WHL RW (DECK L)
47	82-ZM3-331-019		FLY-WHL R2W (DECK R)
A	87-251-071-417		U+2.6-4
B	80-ZM6-243-019		SH,1.75-3.6-0.5 SLT
C	82-ZM3-334-010		PW,2.16-6-0.4

SPRING APPLICATION POSITION



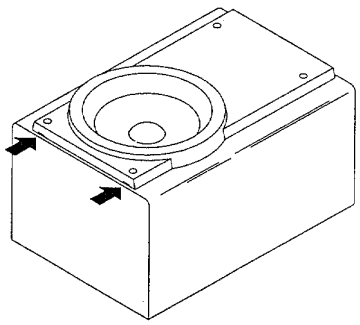


SPEAKER DISASSEMBLY INSTRUCTIONS

Type.1

矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットのビスを取り、スピーカーユニットを外してください。

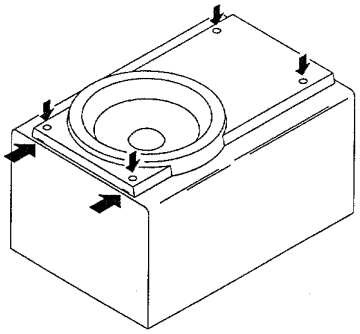
Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.



Type.2

グリルフレームを外し、4個のゴムキャブをマイナスドライバーで端の方から持ち上げて外すと中にビスが有りますので、ビスを取り外します。矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットのビスを取り、スピーカーユニットを外してください。

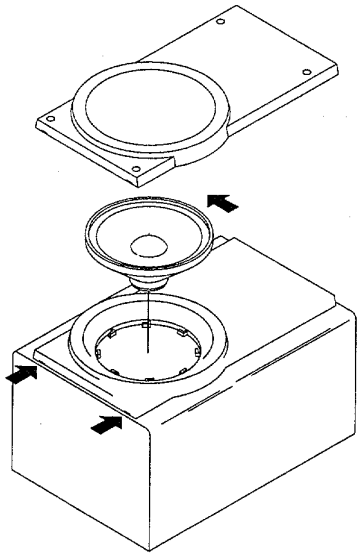
Remove the grill frame and four pieces of rubber caps by pulling out with a flat-bladed screwdriver Remove the screws from hole where installed rubber caps. Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.



Type.3

矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットの凹にマイナスドライバーを差し込んで、反時計方向に回転させスピーカーユニットを外してください。スピーカーユニット交換後は時計方向にクリック音がするまで、回転させて取り付けます。

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Turn the speaker unit to counter-clockwise direction while inserting a flat-bladed screwdriver into one of the hollows arround speaker unit, and then remove the speaker unit. After replacing the speaker unit, install it turning to clockwise direction until "click" sound comes out.



SPEAKER PARTS LIST 1 / 1 (SX-NS22)

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-NSH-001-019		PANEL,FR R
2	87-NSH-002-019		PANEL,FR L
3	87-NSH-005-019		NET
4	87-NS7-611-019		CORD,SPKR
5	87-NSJ-602-019		SPKR,120
6	86-NSZ-602-019		SPKR,CERA 14

ACCESSORIES / PACKAGE LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-NH8-910-010		IB,H(EC-H)I<HR>
1	87-NH8-911-010		IB,H(EC-K)I<HC>
1	87-NH8-905-010		IB,H(IE-KIT)M<HE>
2	87-NH8-601-010		RC UNIT,RC-7<HR,HC>
2	87-NH8-601-010		RC UNIT,RC-7<HE>
3	87-043-095-010		WIRE ANTENNA<HR,HC>
3	87-043-095-010		WIRE ANTENNA<HE>
4	87-043-115-010		ANT,FEEDER FM<HE>
4	87-043-115-010		ANT,FEEDER FM<HR,HC>
5	87-A90-054-010		ANT,LOOP AM-CON C<HE>
5	87-A90-054-010		ANT,LOOP AM-CON C<HR,HC>
6	87-050-103-010		CORD,PIN 1PY1.5M<HR,HC>
6	87-050-103-010		CORD,PIN 1PY1.5M<HE>
⚠ 7	87-009-724-010		PLUG,CONVERSION IR39<HC>
⚠ 7	87-A90-312-010		PLUG,CONVERSION WTN-1157R1<HE>
⚠ 7	87-A90-312-010		PLUG,CONVERSION WTN-1157R1<HR>

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

サービス技術ニュース	
番号	連絡内容
G— —	
G— —	
G— —	

アイワ株式会社
AIWA CO.,LTD.

〒110 東京都台東区池之端1—2—11 ☎03 (3827) 3111 (代表)

9420208, 750038

Tokyo Japan

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